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ABSTRACT

The aim of the study was a search for factors influencing the achievement of black and white elementary pupils in urban schools of varying racial and social class composition. Key variables tested include school racial composition (current and cumulative), school social observers, and the interracial friendliness of classmates as evidenced by their sociometric choices. The sample included all children in 36 sixth grade classrooms, two in each of 18 schools randomly drawn from a matrix representing the racial and social class distribution of interracial elementary schools in the city. The classrooms varied from seven to 100 in the percentage of black children enrolled and from lower to middle in mean socioeconomic status; of the total of 956 children, slightly over half were white. Data to measure achievement, parental occupation, and previous schools attended were copied from school cumulative records. State racial censuses established the racial composition of city schools over a six-year period. After week-long observations in each classroom teachers were rated on Ryans (1960) Characteristics of Teachers Scale. A Sociometric test was the source of information on peer-group friendship patterns. (JM)

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SCHOOL INTEGRATION, CLASSROOM CLIMATE, AND ACHIEVEMENT

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January, 1971

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SUMMARY

The aim of the study was a search for factors influencing the achievement of black and white elementary pupils in urban schools of varying racial and social class composition. Key variables tested include school racial composition, current and cumulative, school social class level, current and cumulative, teaching style as appraised by observers, and the interracial friendliness of classmates as evidenced by their sociometric choices.

Previous research on the relation of school racial composition to achievement is inconclusive. The absence of cumulative measures of racial experience or before and after measures of achievement weakens cross-sectional studies, while longitudinal studies are apt to be confounded by radical changes in quality of schooling. Moreover social psychological theory suggests that on most dimensions the superiority of integrated over segregated schooling is not clear-cut but is conditional on other variables, especially the attitudes and behavior of the teacher and of other children in the classroom.

The sample included all children in 36 sixth grade classrooms, 2 in each of 18 schools randomly drawn from a matrix representing the racial and social class distribution of interracial elementary schools in the city. The classrooms varied from 7 to 100 in the percentage of black children enrolled and from lower to middle in mean SES; of the total 956 children slightly over half were white. Data to measure achievement, parental occupation and previous schools attended were copied from school cumulative records. State racial censuses established the racial composition of city schools over a six-year period. After week-long observations in each classroom teachers were rated on Ryans (1960) Characteristics of Teachers Scale. A sociometric test was the source of information on peer-group friendship patterns.

FINDINGS

Multiple regression analysis revealed that the major hypothesis as to a positive relation between school racial composition and academic achievement, is confirmed under certain conditions. For white children, cumulative percentage white is related to fifth grade Math and sixth grade Reading and IQ scores, even with third grade Reading Achievement controlled, but current percentage white is related to Math, Reading and GPA (6) only when prior achievement is not controlled. For black children, cumulative percentage white is related to Math and Attendance (6), and current percentage white is related to Math. No relationship was found between either measure of racial composition and black achievement in reading, or black or white mark for sixth grade conduct. The betas are larger and more frequently significant for the white than for the black sample, with cumulative rather than with current school per-

cent white as the independent variable, and for achievement in math than for any other dependent variable.

The beneficial effect of cumulative percentage white on achievement in mathematics appeared to be stronger for boys (of both races) than for girls.

For whites school SES, but not family SES, is significantly related to verbal achievement; for blacks family SES but not school SES is so related. This finding suggested that the use of a social class index more often appropriate to the situation in black than in white families allowed us to assign to family SES variance that would otherwise be assigned to peer SES. Indeed, when the regressions were rerun for the sub-sample whose mothers had been interviewed and for whom more accurate and complete measures of SES were available, school SES was no longer significantly related to white reading achievement. However, the original finding of a relation between school racial composition and reading for white but not for black children was confirmed.

Factor analysis of ratings of the 36 teachers of these classrooms revealed three clusters of characteristics ("Human," "Competent," and "Fair"). For black pupils Humanness and Competence correlated positively with growth in reading and Fairness with conduct. For white pupils Humanness correlated with GPA and conduct, Competence with reading growth, and Fairness with attendance. But entering these factor scores into the equations did not reveal any significant relationship between class percentage white and achievement where none had existed before.

Popularity with the other race, as revealed by sociometric ratings received, proved to be significantly related to the GPA and attendance records of both black and white children, but inclusion of this variable among those entered into the regression equations had no effect on the betas for class percent white. However the relation between popularity and grades was stronger for both races when they were in a minority group situation.

Cross-tabular analysis cast doubt on the assumption of linearity in the relation between independent and dependent variables: 50 percent white in schools seems to be an important boundary for both races. Thus the effect of racial context on achievement may in fact be greater than appears in the regression analyses without corrections for nonlinearity.

The finding of a stronger effect for cumulative than for current percentage white is logical and explains why previous studies without cumulative measures of the independent variable have discovered so little effect.

The stronger effect for white than for black children may be an "ecological fallacy," since a selective factor may be responsible.

White families who remain in racially changing neighborhoods are probably of lower social class than appears.

The stronger effect for mathematics than for reading may also be an artifact of inadequate measurement in that no early measure of quantitative ability was available to the study. Or else the explanation may be that math is (a) a school learned skill, and (b) poorly taught in ghetto schools.

Future tests of the hypotheses of this study should include cumulative measures, not only of racial composition, as this study did, but also of teacher characteristics and peer group friendliness. Before and after measures of achievement in several school-learned skills would also be valuable. But until more definitive tests force us to reject the hypothesis, it is our tentative conclusion that both white and black children show higher achievement in schools over 50 percent white.

Desegregating school systems should note the evidence that dimensions of teacher behavior affect black and white children differently and should pay greater attention to the selection and training of teachers for these classrooms. Optimistic attitudes (expectancy of success) and human relations skill are apparently more important than subject competency in raising the achievement of minority group children.

The data also show some support for the proposition that the academic success of minority group students is contingent upon their acceptance into the majority group peer structure. Since peer group status correlates with other types of status, the position of those low on several dimensions is indeed vulnerable and calls for teachers who know how to intervene effectively in support of children (of either race) who find themselves in a racially isolated situation.

CHAPTER I

INTRODUCTION

In 1954 the United States Supreme Court declared de jure school segregation unconstitutional. Though the decision was based in part on the opinion of social scientists that segregation stigmatizes and harms minority group children, little empirical evidence in support of this opinion was available. The 1954-64 decade saw growing public concern over the academic retardation of many minority group children, growing recognition by educators that segregation (either de facto or de jure) is probably at least in part responsible, but no definitive research evidence to support such a proposition. The object of the present study is to determine the short-term and long-term effects of school racial composition on the academic achievement of black and white elementary school pupils and to determine the effect on the above relationship of the friendliness of a child's teacher and his classmates.

DESEGREGATION RESEARCH

Four types of studies of the effect of school racial composition on achievement are reported in the literature.

(1) Longitudinal one-group studies, such as those by Hansen (1960), Stallings (1959), and Katzenmeyer (1963), measure subjects before and after desegregation but lack pre and post measurements on a matched control group. Each of the above researchers found that achievement improved under desegregation, but in each case the gains might be due to changes in the quality of schooling rather than to changes in the racial composition of the classroom.

(2) Cross-sectional studies compare integrated and segregated students at one point in time, but lack prior measurements and thus cannot establish the original equivalence of the two groups of subjects. Such cross-sectional studies either find no difference between segregated and integrated pupils (Crowley, 1932; St. John, 1962; Matzen, 1966; Radin, 1966; Vane, 1966) or find that integrated pupils are superior (Samuels, 1958; Lockwood, 1966; Jessup, 1967). But without measurement of the ability of pupils at the outset of their careers in segregated and integrated settings, such studies cannot prove that such differences as are found are due to racial composition, rather than to a tendency for achievement-oriented parents to select integrated neighborhoods and/or schools.

The Equality of Educational Opportunity Survey (Coleman, 1966) is by far the largest survey of this type, with data on over 600,000 students in some 4,000 schools across the country. Its evidence as to the extent, both of segregation and of minority group academic retardation, was

clear. Less clear, for a number of methodological reasons, was its evidence as to the relation between segregation and retardation. The Report found the strongest relation between verbal achievement and the home background of the child or his schoolmates, but surprisingly little relation between characteristics of the school or its teachers and pupil achievement. A number of researchers have suggested that, had Coleman been able to match teachers and their own pupils, a much stronger school effect or a stronger relationship between segregation and achievement might have appeared. Other scholars have suggested the importance of looking at peer group friendliness when testing the relation between racial composition and achievement (Katz, 1968; Pettigrew, 1967). But no studies to date have been able to control adequately on these and other classroom dimensions.

Another limitation of the EEOS is that it was in no sense a longitudinal study. Achievement scores were based on tests given once in September, 1965. It was not possible to measure pupils before and after exposure to a given school, teacher, curriculum or group of classmates. The school experience since the first grade of pupils found grouped in each classroom on the day of the survey undoubtedly varied from child to child, but these previous school experiences go largely unmeasured. Reanalysis of the EEOS by the U. S. Commission on Civil Rights (1967) and by McPartland (1968) and Smith (1969) clarify many of the relationships reported in the Coleman Report, but cannot go beyond the basic limitation of survey data referring to one point in time.

(3) Post facto longitudinal studies also compare segregated and integrated subjects in the present, but have access to prior test scores of their subjects and thus have some statistical control over contamination of the findings by self-selection. However the experimental and control samples may be unmatched on other variables.

Wilson's study reported in the Appendix of the Civil Rights Commission Report (Wilson, 1967) is of this type. It has the advantage of two types of longitudinal data, first grade mental maturity test scores and measures of school social class and racial integration for each student at each educational level, primary, intermediate, junior and senior high. Wilson found a strong relationship between social class segregation and achievement, but no relationship between racial segregation and achievement. Since Wilson's finding was based on data gathered in a single school district, there is a need for replication of his findings based on longitudinal data from other cities.

(4) Studies with an experimental design either randomly assign subjects to segregated or integrated schools or draw samples of children in the two settings that are matched on a number of variables and then measure the differences in growth for the two groups over one or more years. The author has reviewed elsewhere (St. John, 1970a) the results of nine quasi-experimental studies in which ghetto children transported to predominantly white schools were compared with children

that remained in segregated settings. In five of these studies gains were greater for the desegregated than for the segregated children (Rock, 1967; Laird and Weeks, 1966; Jonsson, 1967; Mahan, 1968; Dressler, 1967). However in no case is the possibility of some degree of staff selection or self-selection ruled out. Moreover there is no attempt to measure (or control) the quality of education in the segregated and integrated settings. Especially when pupils are bussed from a central city to a suburban school system is it probable that gains are due to the quality of schooling rather than the factor of racial composition alone. When the segregated and integrated remain within a single school system variation in school quality is probably smaller.

The Role of the Teacher

In one of the bussing experiments, reviewed above, Project Concern (Mahan, 1968), the evaluator reported that when central city teachers accompanied their pupils to the suburban school and supplied extra remedial and guidance service, gains were greater than when pupils did not receive such support and assistance. This finding suggests the important role that teachers probably play in the adjustment of children to interracial classrooms. In 1958 the Yarrows, summarizing the experience of an integrated summer camp, wrote, "The data point to the counselor as a pivotal figure in determining the success of desegregation. . . . Personal security and warmth in the counselor facilitate the growth of good intergroup relationships among the children" (Yarrow and Yarrow, 1958, pp. 58-59).

Other social scientists have also recognized the important role of the leader in any desegregated situation (Allport, 1954; Dean and Rosen, 1955) or of the teacher in the desegregated classroom (Group for the Advancement of Psychiatry, 1957; Clark, 1965; Katz, 1967; Taba, 1955). That teachers can have a great influence on minority group children can also be inferred from such research evidence as Gottlieb's (1964) finding that white teachers perceived ghetto children more negatively than did black teachers, Amos' (1952) report that Negro pupils believed teachers to be more unfavorable to them than did white pupils or than their teachers themselves claimed to be, and the Davidson and Lang (1960) demonstration of a relation between children's perceptions of their teachers' feelings towards them and their actual achievement. Researchers also find that children perform better if their teachers expect them to do so (Rosenthal and Jacobson, 1968) or dispense praise and positive reinforcement (Clark and Walberg, 1966). Such studies all lend support to the hypothesis that in the desegregated classroom characteristics of the teacher will have a strong effect on the achievement, self-concept and peer group behavior of pupils. But this prediction remains largely untested.

It is not only in regard to the adjustment to an integrated situation that the effect of a teacher on his pupils is insufficiently documented. There is also little evidence of teacher effectiveness in regard to any other kind of outcome. Sarane Boocock reviews 25 years of

research only to conclude, "Very little seems to be known about the relationship between what teachers do in the classroom and the subsequent behavior of students" (Boocock, 1966, p. 6). Biddle (1964) agrees: "The bulk of studies of teacher effectiveness to date have produced negligible results."

As Michelson (1969) says in a recent article, very rarely do studies of teachers' characteristics relate these to measures of students' performance. For instance, Ryans' (1960) impressive study of the classroom behavior of 6,000+ teachers in 1700 schools relates such behavior to dozens of other characteristics of the teachers, but not at all to what their pupils learned. Similarly, evaluations of New York City's large scale Open Enrollment and More Effective Schools projects (Fox, 1966) measured teacher behavior as well as pupil achievement and friendship choices, but did not relate these variables. Currently, with the demand for more complete evaluation of publicly funded programs and with the involvement of economists in studies of inputs and outputs of schools, the spotlight is very much on the output side of the ledger. A review by Wynne (1969) of recent evaluation research indicates that these studies have made little progress in measuring teacher effectiveness.

Interracial Friendship as Intervening Variable

That the academic success of minority group students in interracial classrooms is contingent upon their acceptance into the majority group peer structure is a proposition that has been forcefully argued by a number of social psychologists. For instance, Pettigrew (1967) draws this conclusion from the data gathered by Coleman and others (1966) and reanalyzed by the U. S. Commission on Civil Rights (1967). "Desegregation is a necessary but not sufficient condition for integration, since integration involves in addition to racial mix a climate of interracial acceptance." In desegregated schools where teachers reported no racial tension, Negro students were found to have high verbal achievement, firm college plans, and positive racial attitudes. Further evidence that the interracial climate of the school intervened between the fact of desegregation and its benefits for students is McPartland's (1968) finding that ninth grade Negro students who had close white friends were more likely than others to plan college, even with classroom racial composition and family background controlled (p. 302) and that white students with Negro friends were less apt than others to want an all-white school (p. 325). Katz (1964 and 1967) proposed, on the basis of his review of social psychological literature and laboratory experiments with black students in bi-racial situations, that school desegregation involves both "social threat" and "social facilitation." The relative strength of such factors depends on the degree of acceptance and approval the students meet in the new situation.

Though the evidence of the Coleman data is suggestive and the reasoning of Katz and Pettigrew most plausible, their hypotheses have not as yet been fully tested. In order to demonstrate that the bene-

fits of integration are mediated through peer friendship, we need a better understanding of interracial friendship. This means studies that go beyond statistical manipulation of the relative numbers of black and white children (as the independent variable) and their test scores or questionnaired attitudes (as the dependent variables). We must examine systematically the desegregation process and interaction in the classroom and develop adequate measures of a "climate of interracial acceptance."

DIMENSIONS OF SCHOOL RACIAL MIX

This section attempts to pull together those insights of social psychologists and deductions from various bodies of theory that seem most useful in framing a set of conditional hypotheses as to the relation between aspects of school racial mix and the attitudes and behaviors of pupils.

Many proponents of school integration base their case not on any intrinsic merits of racial mixture per se, but on the assumption that only integration will assure black children (a) quality schooling and (b) classmates of mixed social class backgrounds. Their arguments are in part reality-based and compelling. On the other hand, in our diverse and dynamic nation, it should also be realistic to contemplate achieving for blacks top quality schooling and some measure of social class integration without racial integration. In any case it is theoretically as well as practically important to understand the separate effects on children of the racial variable. Our question then becomes: Holding constant the quality of schooling and the social class level of fellow pupils, what does the racial composition of a school mean to a pupil? At least six dimensions seem to be involved. In each case the superiority of the integrated* over the segregated school is not clear-cut, but is conditional on other variables. We will first consider the case of the black child and then reverse the coin and attempt to apply the same logic to the case of the white child.

Dimensions of School Racial Mix (a) for Black Pupils

1. Symbol of Powerlessness

An involuntarily segregated school can be considered a symbol of the powerlessness of the black community. Whether segregated by law,

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*Many writers avoid the word "integrated," as implying interracial acceptance. "Desegregated" is, however, not appropriate for a school that has always had pupils of both races. We will use "integrated" (or "bi-racial") to refer both to schools that have long been interracial and to those that have recently become so, without any implication thereby as to the acceptance of the minority group into the life of the school.

by administrative gerrymandering, or by discriminatory housing practices, schools have not been one-race because of the wishes of the black community. Repeated polls testify, even today, to the preference of most black parents for integrated schools (Brink and Harris, 1964 and 1967; Marx, 1967; Pettigrew, 1969). The child who attends a ghetto school, therefore, can be expected to feel consciously or unconsciously that he is daily participating in black powerlessness and in the symbolic denial by America of its democratic ideals and of the equality of all citizens (Clark, 1955; HARYOU, 1964; Pettigrew, 1969).

On the other hand, Carmichael and Hamilton argue that those parents who put their children into integrated schools are thus supporting black powerlessness in a still more insidious way. They are acting "on the assumption that there is nothing of value in the black community" and "that in order to have a decent house or education, black people must move into a white neighborhood or send their children to a white school" (Carmichael and Hamilton, 1967). Moreover, being in a minority, such parents have even less potential influence on the policies of the school than they have in the ghetto. This suggests that a segregated school is not necessarily a symbol of powerlessness, nor an integrated school a symbol of powerlessness denied. The essential condition is self-determination, both on an individual and community level, or as Hamilton and Carmichael put it, the abolition of dependent colonial status.

On this symbolic dimension, then, the child who attends an integrated rather than a segregated school would benefit only if the desegregation were voluntary or achieved through community effort (as in the case of "Operation Exodus") (Teele, Jackson, and Mayo, 1967). On the other hand, if a community achieved control of a ghetto school and managed it successfully, its children might experience more sense of power than former classmates who have fled the ghetto to a white neighborhood (Clark, 1965; Hamilton, 1968).

2. Sense of Relative Deprivation

One aspect of the sense of powerlessness is the perception of relative deprivation in comparison with members of another group. Robert Merton (1957) studying this problem in relation to the American soldier in World War II found that soldiers sometimes compared themselves with buddies, sometimes with strangers in the same social category, and sometimes with those similar in some salient respects and dissimilar in others. Predicting which among possible reference groups men will choose to compare themselves with proved an interesting and tricky theoretical issue.

Altogether the median years of schooling of Negroes in this country has risen rapidly in the last two decades; they nevertheless experience relative deprivation in respect to educational opportunity.

Pettigrew (1964) discussed the recent actual gains but psychologi-

cal losses of Northern Negroes. They feel, he said, left behind when they contemplate the rapid gains of Southern Negroes and Africans, but particularly left behind when they compare themselves with white Americans (Pettigrew, 1969). This is surely still true, six years later.

Moreover, it is unlikely that there have been as many actual gains in the quality of schooling available to the residents of the ghetto as there have been in their quantity of schooling completed. Thus Northern black parents, comparing their children's schools with those they themselves attended a generation ago or with those available to Southern black children today, may have little cause for satisfaction. But in this day of rising expectations of minority people, it is the white children in the same metropolitan area that black parents and children would most naturally choose as their comparison group. In reference to these children, similar in age and region, but dissimilar in color, ghetto residents surely feel they are not getting their fair share of the school pie, either with respect to the replacement of outworn buildings, provision of school supplies, assignment of teachers, curriculum offered, or especially with respect to formal or informal influence on policy formation.

Attendance at an integrated school, however, would not necessarily lessen a black child's sense of relative deprivation, any more than it would mitigate his sense of powerlessness. In fact his sense of relative deprivation in relation to the white pupils with whom he is in daily contact might be even more acute than that of ghetto children in relation to unknown white pupils in distant schools. Several factors might govern whether or not a sense of inequality develops; among such factors are his social class background in relation to that of his classmates, the adequacy of his previous academic training in relation to theirs (Katz, 1964), whether he, and not they, has a long bus ride to school, whether he is placed in a lower track than most of the children, and whether the teachers are fair and integrated and the curriculum recognizes his cultural heritage as well as that of majority group children.

3. Perceptions of the Expectations of Significant Others

In the past, few participants or observers have held high expectations for the pupils of a ghetto school. Neither principals, nor teachers, nor community residents (in general), nor parents (in particular) have believed that such a school would maintain high standards or prepare children to compete on an equal footing for college entrance or jobs (Clark, 1965). Brookover and others have hypothesized and found evidence of a correlation between (1) the parent's or teacher's estimate of the ability of a child, (2) the child's perception of such estimates, (3) the child's rating of his own ability, and (4) the child's actual performance (Brookover, et al., 1965; Davidson and Lang, 1960; Schwartz and Tangri, 1965). In the now famous experiment reported by Robert Rosenthal and Lenore Jacobson (1968), randomly selected pupils made significant gains in IQ test scores after their teachers had been led to

expect such gains. In view of such evidence, we can assume that children would not be unaffected by the low expectations for themselves as a group and as individuals as long as they remain in the typical ghetto school.

In an integrated school, however, a black child does not necessarily escape the depressing effect of low expectations of others. The expectations of staff and pupils may here be low, not for all as in the ghetto school, but merely for the "culturally deprived," the bussed, or the black pupil. The effect could be all the more devastating. The fact that in such a school his parents' expectations for him are usually high, could be, suggests Katz (1968), actually dysfunctional for a child, if his anxiety is thereby raised and he is not supported by equally reassuring expectations (and help) from his teacher. A new school or desegregation invites "a transformation of identity" (Strauss, 1967), but such transformation might go either way and might lead a child to assume or shed the conventional role of the Negro (Pettigrew, 1964; Grier and Cobbs, 1968). It all depends on the expectations and perceptions of the other actors on the new stage.

4. Universalistic Standards of Excellence

Moynihan (1968) argues that in a caste situation such as the rural South personal characteristics have little chance of affecting achievement, but when a Negro moves to the urban North he can for the first time experience success and failure. So, too, when a child moves from a segregated to an integrated school, he may leave a protected situation and faces more "universalistic standards" of excellence and the opportunity for cross-racial evaluation (Pettigrew and Pajonas, 1965; Pettigrew, 1968). Katz (1967) believes that such cross-racial comparisons can have both a high incentive value and a high informational value. The black child wants to succeed in the interracial classroom and there learns that many whites are not better students than he.

But the advantages of realistic competition can be off-set by fear of failure. Katz goes on to postulate that in view of generally inadequate early training, either at home or in segregated schools, a desegregated child will often have a low probability of success. He may not be prepared to live up to expectations of his parents and his own motivation to do well. Anxiety and lowered self-concept follow (Katz, 1968). To use Merton's terminology, he has adopted the "cultural goal" of academic and vocational success, but may not have gained through desegregation the "institutional means" of realizing that goal (Merton, 1957). Whether the resulting conflict leads to inner stress or to outer rebellion, it may take its toll. Though academic failure, anxiety and deflation of aspiration are thus possible in the desegregated classroom, the opposite phenomena is just as possible. There are several determining conditions. One is the initial difference in achievement level of black and white children. Another is the availability of school academic policies that favor overcoming handi-

caps. Most important is the classroom atmosphere--the friendliness of the teacher and white children and the "social facilitation" they afford to the newcomers (Katz, 1964).

An integrated school not only offers universalistic standards against which an individual can judge his own achievement. It also necessarily offers a curriculum which stresses the dominant culture. Though the history of minority groups in this country and their contributions to American life is an important part of the curriculum of any public school, it is only a part. A segregated school is potentially adaptable to the needs and interests of its special population. An integrated school may be necessarily less flexible in this regard.

5. Contagion from Peers

Another dimension of school racial composition is exposure to classmates with certain values, norms, and cultural patterns. Sutherland's theory of differential association as an explanation of juvenile delinquency can be turned inside out, to become an explanation of the acquisition of positive norms and values as well (Glaser, 1967). If (and only if) white children have a more positive attitude towards society, towards themselves and their future, and towards school and learning than black children, and if we accept the proposition that the greater the proportion of any social group in a school the more likely that its norms and attitudes dominate and are adopted by members of other groups, then we would predict the transmission of positive attitudes to all children in a school in which white pupils are in the majority. The viability of this assumption rests on the degree to which black and white children in a bi-racial school are integrated into a single group. If they are separated, either formally through academic tracking or informally through social distance or hostility, then association and the "homogenization" of attitudes will be within, rather than between, racial groups (Wilson, 1968). The probable importance of interracial friendship for high achievement in integrated settings is stressed by Pettigrew (1968), Cohen (1968), and Katz (1964) and others and supported by some (to date, rather meager) evidence.

It is possible, however, that the importance of close interracial friendship has been overstressed. In the first place newcomers in any situation may adopt the culture of the majority group through "anticipatory socialization" (Merton, 1957; Turner, 1964). Socialization may then lead to friendship, rather than friendship being a prerequisite for socialization. In the second place black children do not at all necessarily come to a bi-racial school with less positive attitudes than their white classmates. Very often their attitudes are exemplary. They may manage the marginality of their position by maintaining a black rather than a white reference group (Shibutani, 1967), and be more, rather than less, motivated as a consequence. Though resisting "contagion" from peers they may benefit from other dimensions of the bi-racial school. Close interracial friendships may develop, but they are not a necessary ingredient to the academic success of such children. The white friends might be the beneficiaries.

6. Interracial Contact

Attendance at a bi-racial school exposes a child not only to the attitudes of the other group, but also to a change in his own attitude toward the other group. The hypothesis that interracial contact leads to reduced prejudice has received some confirmation. The important conditions apparently are that contact be prolonged, equal-status, and in pursuit of common goals (Allport, 1954). Whether or not black and white children in desegregated schools develop more favorable attitudes towards each other after some months or years together is not established, though available evidence to date suggests that this does occur (Yarrow, Campbell, and Yarrow, 1958; Webster, 1961; Dentler and Elkins, 1967; see also Suchman, Dean, and Williams, 1958, and Fauman, 1957, in regard to this and other dimensions of segregation).

The foregoing consideration of various meanings of school racial composition for a black child leads to this proposition:

> Black children will have higher self-esteem, aspiration, academic achievement and interracial acceptance in an integrated than in a segregated school
>
> (1) provided it is voluntary and achieved through individual or community self-determination
>
> (2) provided there is no sense of deprivation in relation to white pupils in the same school
>
> (3) provided favorable expectations of significant others are for white and black pupils alike
>
> (4) provided the academic gap is not too great and teachers help newcomers to overcome initial handicaps
>
> (5) provided there is no formal or informal within-school segregation
>
> (6) provided interracial contact is equal status and occurs under conditions that threaten neither racial group.

Dimensions of School Racial Mix (b) for White Pupils

1. Symbol of Power

The pupils in a segregated white school are less aware than those in a segregated black school of their participation in the symbolic denial of American democratic ideals as to the equality of all citizens. In the North, until recently, distance from the ghetto and a "conspiracy of silence" have quarantined most white children from

realization of the existence and nature of ghetto schools. This is no longer true except for very little children. The desegregation controversy and its treatment by press and television have brought home to suburban children a realization of their privileged position and exposed them to a false sense of superiority. Rescued from ignorance, they are now exposed to the more dangerous rationalization of their elders and a sense of de facto implication in an institution which denies the democratic ideals they are being taught to revere. So this dimension of segregation can harm white children as well as black children, though the effect on the former could be the encouragement of hypocrisy and prejudice and the effect on the latter the development of bitterness and lowered self-concept.

2. Sense of Relative Deprivation

The students of segregated white schools, even mediocre or working class schools, will presumably have fewer negative feelings about their schools and less sense of relative deprivation than students in racially changing schools, unless the black power movement succeeds in winning better buildings or more federal money for ghetto schools than they themselves enjoy. It is also possible that in one-race schools in any neighborhood the children of enlightened parents may feel relative deprivation in relation to those attending bi-racial schools, but such reactions are unfortunately likely to be rare.

3. Perceptions of Expectations of Significant Others

To abstract, even in imagination, the effect of a school's racial characteristics, apart from its social class and academic characteristics, is as hard in the case of white children as it is in the case of black children. Regardless of the facts, one commonly accepted meaning of a segregated white school is "middle class" and another is "high quality." In contrast, the term "racially mixed" conveys to many the image of a lower class and educationally inferior school in a changing neighborhood. Although our interest is in the psychological and educational implications of a school's racial mix per se, regardless of its social class or academic quality, we cannot ignore popular conceptions, since they impinge on pupils and affect their status among peers and their self-concept.

White children will be adversely affected just as black children are, by attending a school with low status in the eyes of the community or one in which parents and teachers have low expectations for academic accomplishment. On this dimension, then, they will ordinarily suffer from attending a majority black school. But even a minority black school may have low status; proximity to a growing ghetto, or the rapid increase in proportion of black pupils often lead to perceptions of falling standards which outrun the facts and act as a self-fulfilling prophecy (Fauman, 1957). White children in such a school might overreact to such perceptions and lose interest in school; they might feel the same sense of relative deprivation in comparison with former class-

mates who have moved to the suburbs that blacks feel in comparing themselves with pupils in suburban schools.

4. Academic Challenge

Desegregation probably has the Hawthorne effect of stimulating white as well as black pupils to do their best. If the newcomers seem nervous or unfamiliar with the work, socially sensitive children in the receiving school may slow down for a time. But either effect would probably be short-lived. The long-range academic effect of desegregation on members of either race depends surely on the academic policies and resources of the school, on whether the quantity and deployment of manpower allows individualization of work, and whether desegregation itself acts as a stimulant or depressant to the quality of teaching.

5. Contagion from Peers

According to the theory of differential association, the larger the percentage of blacks in a school, the more likely that white children will adopt their attitudes and behaviors. Many people accept the general principle without the necessary qualifications and leap to the unwarranted conclusion that the more blacks in a school the less desirous will be the attitudes and behavior of white children. In the first place there is probably little difference between the norms of the two groups of children, once social class is controlled, and any differences that exist are certainly not necessarily to the exclusive advantage of one racial group.

For instance, studies repeatedly find that black students report higher aspirations, but show less realism or knowledge about the world of work (Wilson, 1967). If lower class white youth learned aspiration for further education at the same time as black youth learned realism about how to achieve it, both could benefit from mutual association.

In a lower class neighborhood there is the realistic possibility that school racial change will expose white pupils to greater disrespect for the teacher and to behavior patterns antithetical to learning. It is also arguable that whites are today learning from blacks the technique of constructive protest, not merely self-defeating rebellion. Reference group theory suggests that the numbers game alone will not determine who will adopt whose norms in this situation. Status considerations, mobility aspirations, and school situational factors may lead children to cling to or to adopt the norms of the minority or majority, be it black or white. On this dimension, then, though there is the possibility that desegregation will hurt white children by exposing them to the victims of social disorganization and discrimination, there is also the likelihood that they will either resist or benefit from homogenization of norms.

6. Interracial Contact

The same propositions as to the effect of contact on the interracial attitudes of black children apply in the case of white children. The point should be made, however, that isolated white children in majority black schools are as liable to social threat and constricting fear as are black pioneers in predominantly white schools. The chief difference is that the former are usually low SES children in low SES schools and the latter upwardly mobile children in middle class schools. The realistic risk of physical molestation might therefore be greater for the white child in the ghetto, the risk of well-bred ostracism greater for the black child in suburbia. Either social situation is stressful; whether or not it results in increased hostility or lowered self confidence would depend on many factors, especially basic personality structure and family support.

This review of the possible meanings of school racial mix to a white child suggests the following proposition:

> White children will generally benefit from attending a bi-racial but majority-white school, rather than an all-white or a majority black school. Their self-concept, aspirations and academic achievement will not be damaged and their interracial attitudes will be more favorable.

HYPOTHESES

Our review of social psychological theory and related research suggested that any study of the interrelation of school racial composition and achievement should incorporate measurement of at least five other variables into the overall design: family social class, the social class of school mates, school quality, and friendliness of teachers and peers. We therefore formulated the following predictions as guides to the current research:

(1) Controlling for quality of schooling, for family social class, for average school social class in previous grades, and for prior achievement, there will be a significant positive relationship between school percent white in previous grades and achievement.

(2) Controlling for quality of schooling, for family and classroom social class, and for prior achievement, there will be a significant positive relationship between current school percent white and achievement.

(3) The relationship between current percent white and achievement will be greater when characteristics of teachers are controlled.

(4) The relationship between current percent white and achievement will be greater when interracial popularity is controlled.

CHAPTER II

PROCEDURES

THE CITY AND THE SAMPLE

The choice of Boston as a locale for the study was guided by considerations other than mere geographic convenience. Only a city with a large black population would fit the demographic requirements of the study. We wanted a sample of 500 black pupils at a single grade level who had attended northern schools of various racial and social class mixtures since first grade. In view of the known prevalence of *de facto* segregation we could not hope to find a large city in which over half the elementary pupils had always attended schools less than 50 percent black. But at the very least we were looking for 200 pupils who had spent all elementary years in schools less than 80 percent black and 50 who had always attended schools less than 50 percent black.

Narrowing our search to schools with at least 5 black pupils at the sixth grade level, we found in Boston 47 such schools enrolling over 1500 black sixth graders in 101 classrooms (see Appendix Table 1). One third of these children were in classrooms less than 50 percent black, and one half of these schools had been integrated (2 percent to 80 percent black) over the past five years. Thus, demographically, Boston appeared to be a suitable locale for the study.

Among the school system factors that were deemed important in the choice of locale was, first and foremost, whether or not initial permission to conduct the study and subsequent cooperation of school personnel could be obtained. Such permission and full cooperation were granted by the Boston School Committee and Administration. Other factors considered include the equality of schooling in segregated and integrated schools, the policy of the system in regard to ability grouping and tracking, and whether any type of open enrollment would enable us to separate the effects of segregation in schools from that of segregation in neighborhoods.

The hypothesis rests on the assumption that segregated schooling is by definition not equal to integrated schooling. But this inevitable inequality involves subjective, psychological differences rather than objective ones. Unless schools are equated on objective criteria it is not possible to isolate the effects of "separate but equal" schooling. It was our assumption that some measure of control on school variables would be achieved by limiting the comparison to schools in a single system. Within these limits, however, there is room for considerable variation between majority white and majority black schools. Therefore it seemed to us essential to place observers in the schools to assess school to school differences.

Since the study was focused on the effects of segregation by schools rather than on segregation by tracking within schools, we wanted a city in which elementary classrooms would be heterogeneous in respect to ability. In Boston, except for a small number of classrooms for the "gifted" or the "slow learner," classrooms are in theory heterogeneous.

Another desideratum was a system policy which allowed parents to enroll their children in schools outside of their residential neighborhoods, with or without a bussing program. Only in a city in which such open enrollment is practiced did it seem possible to isolate the effects of integrated schooling per se. Here again Boston satisfied this criterion.

The choice of the sixth grade as the level from which to draw the sample was influenced by three main considerations.

(a) We wanted to study pupils midway in their school careers, at a point at which we could evaluate the cumulative effect of elementary education and could get a Time I measurement for a possible longitudinal examination of the effect of integrated secondary schooling.

(b) We wanted to reach students at an age at which they must make important career decisions; but before most of the eventual dropouts had yet left school.

(c) We wanted to study one of the grade levels chosen by Coleman so as to be able to compare our findings with his.

The next decision was the choice of schools. In order to economize effort and to be able to separate the potential effects of school and teacher, we decided to study all pupils in two sixth grade classrooms in each of 18 schools. Preliminary interviews with the principals of the 47 schools which enrolled 5 or more black sixth graders in the spring of 1967 provided estimates of the social class level of these schools. Using this information and the School Racial Census, we prepared a 20-celled matrix of School SES by School Percentage Black and planned to include one school from each of the 14 cells that were not blank. Thirteen schools were eliminated because they had only one sixth grade classroom and four schools because they enrolled only boys or only girls. From the remaining 30 schools one was drawn randomly from each cell. In order to produce a large enough sample of black pupils in schools less than 20 percent black, we added four extra schools in this category (see Appendix Table 2). Since 10 of the chosen schools had only two sixth grade classrooms, both fell in the sample. In schools with more than two classrooms, we used a table of random numbers to designate the sample classrooms (see Appendix Table 1).

The final sample of 36 sixth grade classrooms is roughly representative of classrooms in co-educational elementary schools in the

Boston school system with two more sixth grade classrooms and 5 or more black sixth graders in the spring of 1967. The schools ranged from 6 percent to 100 percent black and from "lower middle" to "lower-lower" class. The final sample of pupils included 957 children, 497 white, 412 Negro, and 48 Chinese, Puerto Rican or other. The analysis reported in this monograph focuses on 909 white and Negro pupils and ignores the other non-white pupils (see Appendix Table 2).

A comparison of the social contexts of the sample classrooms suggests that they represent four familiar urban school settings. Seven schools were on the periphery of, though within, the central city, and served a predominantly white, lower-middle class population. With rare exception the black children in these schools did not live in the neighborhood. They were either transported by the School Department because their local school had burned down, or came as "open enrollment" pupils through a parent-sponsored bussing program or on individual parent initiative. Regardless of the mode of entry, black pupils in these schools were newcomers, very much in a racial minority, and on the average several months behind resident children in achievement test scores.

Five schools were in lower class, but majority-white, neighborhoods. In three of these districts, housing projects had held the racial balance over a number of years, but all were then undergoing rapid racial and socio-economic change. Some black pupils came from out of the district, but not as part of a bussing program. Black parents tended to be upwardly mobile, moving up the economic ladder as they move out from the ghetto. White parents regretted the changes in the neighborhood and were restless to follow family and friends to the suburbs. Racial friction in the neighborhood was high, but in school black and white children tended to associate freely and to be academically well matched.

Three schools were in majority-black lower class neighborhoods. Two were in very ethnically mixed lower class districts and had as many Chinese and Puerto Rican as black and white children. One school had recently tipped from majority white to majority black.

Three schools were over 90 percent black. In two of these, many of the black children suffered deprivation of one sort or another, but the few white children in attendance tended to have even poorer homes and lower achievement scores than their black classmates. Finally, one school was in a stable all-black neighborhood. Many parents in this school were middle class and had high expectations for their children.

THE DATA

An observer spent a week in each classroom, interviewing teacher and principal, administering a sociometric test and a questionnaire to measure the self-concept and attitudes of pupils, and making structured and unstructured observations of teaching style and teacher-pupil and

pupil-pupil interaction. Another staff member copied cumulative records on the family background, previous schools and the achievement of pupils. For each pupil the racial composition and social class level of all schools attended since first grade was later calculated. In addition, a random sub-sample of 4 black and 4 white mothers for each classroom was interviewed to measure their aspirations, racial attitudes and judgments of the teachers and to allow estimates of the social class level of children that would be more accurate than those based on school record data.

Together these procedures resulted in a large bank of data, on the basis of which many diverse hypotheses may be tested. Only a few of the variables on which we have estimates are relevant to the project to be reported here. But since the latter involved testing the central hypotheses of the study, particular attention during the design and preliminary analysis stages went into the measurement of its key variables. We will now define those variables and describe the process by which they were measured.

MEASURING THE VARIABLES

The Dependent Variable - Academic Achievement

A number of alternative measures of the dependent variable, academic achievement, were available, no one completely satisfactory. From the pupil's cumulative record a member of the study team copied his academic marks in all subjects as well as in "Conduct" and "Effort" and his absences from grades 2 through 6. Letter grades were assigned numerical equivalents and averaged for grades 2-5 and for grade 6. Five test scores were also copied for each pupil (when available).

Grade Point Average, 2-5 - average academic mark received in grades 2 through 5.

Grade Point Average, 6 - average academic mark received in first 3 marking periods in grade 6.

Conduct, 2-5 - average mark for conduct in grades 2-5.

Conduct, 6 - average mark for conduct in grade 6.

Attendance, 4-5 - average number of absences in grades 4 and 5, reversed.

Attendance, 6 - number of absences in grade 6, reversed.

Reading - Fall, 3 - the grade equivalent score for the average of paragraph and word meaning

sub-tests of the Metropolitan Achievement Test administered in the fall of third grade.

Reading - Fall, 6 - ditto for test administered in fall of sixth grade.

Reading - Spring, 6 - ditto for test administered in the spring of sixth grade.

Math - Spring, 5 - grade equivalent score, Metropolitan Achievement Test in arithmetic administered in spring of fifth grade.

IQ - 6 - Score received on Kuhlman Anderson group-test administered fall of sixth grade.

This study is of the post-facto, longitudinal type in that, for a sample drawn in the present, early as well as late measurements of achievement are available. It is therefore possible, not only to compare cross-sectionally the achievement of those who have experienced varying degrees of segregation or integration, but also to compare the academic growth of these children. Unfortunately the early measurements are incomplete: only one math score is available, a fifth grade score, and the only IQ score comes from a test administered in grade 6. But we do have a reading estimate for the beginning of the third grade for three quarters of the sample and can use that as a control when looking at achievement in arithmetic or reading three years later. We can also study growth in reading between the fall and spring of the sixth grade year and can compare sixth grade and pre-sixth grade GPA, conduct and attendance record.

We said above that no available measure of academic achievement is completely satisfactory. This is so, not only because we do not have estimates of a range of academic abilities in grade one. In addition, we recognize that test scores are undoubtedly less accurate measures of the academic potential, or even of the developed academic skill, of black pupils than of white pupils (Society for the Psychological Study of Social Issues, 1964). Academic marks are even more suspect as measures of achievement, reflecting as they undoubtedly do teachers' knowledge of test scores, their biases and the level of achievement of the class as a whole. Attendance, on the other hand, though more objective, probably mostly measures the incidence of colds or childhood diseases. We therefore focused on attendance in the later grades, but it is probably even here related to health or family problems, or at best alienation from school, in other words motivation rather than achievement. Because we are aware that each available measure of academic achievement is in some respects unsatisfactory, we will not settle on one alone, but will test the hypotheses with alternative dependent variables.

Major Independent Variable - School Racial Composition

Two measures of pupils' cross-racial exposure in school will serve as the chief independent variables of this study.

(1) Classroom percent white, sixth grade

Appendix Table 2 shows the percentage of white pupils in the 36 sample classrooms and indicates that the range is good, though inevitably with a sample of this size the number of black children in predominantly white classrooms and of white children in predominantly black classrooms is uncomfortably small for statistical manipulation. Two further points should be noted: In some schools the racial composition of the two sixth grade classrooms is quite different. This is why we designated the classroom rather than the school as the unit for the sixth grade analysis. In the second place 48 "Chinese and others" are included in the base on which classroom percentage white is calculated, although these few children will be omitted from most of the subsequent analyses on the ground that their situation is special but their numbers few.

(2) Average school percent white, grades 1-5

The procedure for creating this variable was as follows. From school cumulative records we copied for each child the name of the school he had attended (or attended longest) in each grade, 1-6. A matrix was prepared of the percentage non-white of all elementary schools in the city 1960-67, based on the state racial censuses of March, 1964, October, 1965 and October, 1966. The estimates for the three preceding years came from the reports of the principals we interviewed and through extending backwards the 1964-1967 trends. The matrix was checked by the Assistant Superintendent in charge of Elementary Education and by a school authority in the Boston Redevelopment Office. Referring to this matrix, we assigned each child a school percentage white estimate for each elementary grade. School percentage white, 1-5, is the average for the first five years. We do not know previous classroom percentage white, but can assume that, in a school system committed to heterogeneous grouping, this would average over the years very close to school percentage white.

Minor Independent Variables (Control) - School Quality and SES

School Quality

We acknowledged above the importance of controlling on school quality when studying the relation of racial mix and achievement, and

suggested that a very partial control on this variable would be achieved by confining the analysis to a single school system. We had hoped to find further ways to control on this factor after our observations in the schools and interviews with their staff. However the preliminary visits to 46 schools and week-long observations in 18 schools did not reveal large or consistent differences from one Boston school to another in plant, equipment, curriculum or methods. The most noticeable differences were those that were associated with the social class level of the pupils (higher staff-pupil ratio in ghetto schools) or with the personality of the individual teachers--variables that we do attempt to control. To the extent that these variables do not pick up all the variance, school quality is inadequately controlled.

Family Socioeconomic Status (SES)

The measurement of family social and economic status (SES) was the most difficult methodological problem of the study. The only readily available information was the occupation of the head of the household recorded on the pupil's cumulative record card. But in many cases this information was vague or missing and requests for updating sent home by pupils remained unanswered. The City Directory was consulted, but proved of relatively little help, as the occupations listed were often imprecise and hard to code. Residence in a low income housing project was considered as a possible indication of income level, but rejected in view of the range of SES levels our interviewers found in projects. Finally children's reports of their parents' educational level also proved of little use. Non-response rates were very high (33 percent re mothers and 45 percent re fathers), and of those who responded over a third upgraded parental education as indicated by the reports of mothers whom we interviewed (St. John, 1970b).

The parental occupation recorded on the cumulative record card thus seemed to be the only possible measure of SES for the three quarters of the sample families who were not interviewed, although a comparison for those interviewed of the school records and mothers' reports indicates that the records were accurate in only four cases out of five. But to determine family SES solely on the basis of the occupation of the head of the household seemed wrong, not only because data was often missing and inaccurate. There was the further difficulty that the male occupation listed was not that of the child's father for 35 percent of the black children and 23 percent of the white children. In the third place, 35 percent of the black mothers were employed either as sole bread winners or in addition to their husbands, and we found for the subsample that the occupation of black mothers correlated more highly with other measures of SES than did the occupation of black fathers. Finally in many cases the records seemed to indicate that the family was receiving public welfare. All in all it seemed advisable to create an SES index that would reflect family stability and the mother's as well as father's contribution to the family's status.

Our final measure of family SES is the average occupational level (coded according to Hollingshead's 7-point scale) of a child's father,

if he were present, and of the child's mother, if she were employed. The rating is thus based on the father's occupation only, if the mother was not employed, or on the mother's occupation only if the child's own father were not present. In those cases in which neither parent was employed and no visible income existed, the family was presumed to be on welfare and assigned to the lowest SES category. (See Table 1.)

TABLE 1: Mean SES Score, by Basis of Assignment and Race

	Whites		Blacks	
	N	$\bar{X}$	N	$\bar{X}$
Own Father's Occupation, only	280	2.74	117	2.44
Mean Own Father and Mother	62	2.65	78	2.30
Mother's Occupation, only	41	2.39	67	2.22
No Income	76	1.00	114	1.00
Total	459	2.41	376	1.94
Blank	38		36	
	497		412	

An SES score is available for 376 black children ($\bar{X}$ = 1.94; s.d. = 1.02) and for 459 white children ($\bar{X}$ = 2.41; s.d. = 1.22). For blacks this score correlates better with measures of achievement than does Father's occupation alone. For instance, for fall reading the correlation is .24 for the new score, whereas it was .15 for father's occupation. For white children, however, we found that the correlation for the SES score with achievement (r = .15) was almost as low as the correlation with father's occupation (r = .12). Such lack of relationship for whites between social class and academic performance was hard to believe and became the subject of considerable special analysis. Our conclusion is that our sample schools (which were chosen to represent schools in which black children were found in various proportions) have probably given us a somewhat biased sample of white children. An intricate interaction effect between parochial school attendance, SES, sex and academic ability has apparently resulted in our sample including some over-representation of low ability, white, middle class boys, and underrepresentation of high ability lower class girls, enough to reduce the normal correlation between achievement and SES for whites.

Our evidence is as follows:

(1) Boys are over represented in the white sample (55 percent).

(2) Fewer boys than girls have attended parochial school in previous grades (7 percent as compared with 14 percent).

(3) The correlation between IQ and SES for whites is normal for girls (r =.26), but non-existent for boys (r = .04).

All the above facts could be explained by a tendency for white parents in racially mixed school districts to send girls more than boys to parochial schools. If middle class parents sent only low IQ boys to public school or if lower class parents sent only high IQ girls to parochial school, the effect would be a sex differential in the numbers in public school and in the correlation of SES and achievement.

No such extreme differentiation by sex, SES and IQ has occurred, but there is probably some such tendency at work to explain the low correlations that puzzle us. This slight bias in the white sample should be borne in mind as the reader examines the analyses to be presented in the next chapter.

Class SES (6)

Individual family SES scores for all children in a classroom (black and white) were averaged to form a measure of classroom socioeconomic status. Class SES and Family SES are thus not wholly independent being based on the same source of data. Our measure of School SES, on the other hand, is quite independent of our indices of class and family background.

School SES, 1-5

School SES, 1-5 is the average social and economic status of schools attended in grades one to five. Using 1960 U. S. Census data, we calculated the average income level and the average educational level (years of schooling completed) for residents of census tracts included in each school district. (If portions of a tract were included in more than one district, that tract was listed under each of the districts.) Occupation was not used as a dimension of SES because the non-response category was over 30 percent in some census tracts. Districts were then ranked separately on the income and education dimensions and the sum of these ranks ordered to create our measure of school district SES. Children were assigned such an estimate of School SES for each grade, one to five, and the five estimates were then averaged.

Our method of measuring school socioeconomic status is subject to criticism, in that 1960 data, while presumably relevant when sample members were in Grade One, may have been an inaccurate description of the 1966 status of neighborhoods undergoing rapid change. Moreover, in

view of the large parochial school attendance in some districts, the background of the clients of a public school may not match that of the residents of the district in which it is located. Furthermore, open enrollment policy made it possible in theory for students to attend schools outside assigned districts. In practice, not enough families took advantage of this opportunity, particularly during the early years covered by this study, to affect the average SES of a school.

The alternative of estimating the SES of 119 schools in the city with data about the families in our sample who had once been their clients seemed subject to more serious error. High rates of intra-city migration meant that sample members had attended many different schools over the years, and there was no way of knowing how representative of those schools they were. One merit of our estimate of school SES is that it is independent of individual level SES.

Teacher Characteristics

Considerable effort went into an analysis of the characteristics of the 36 classroom teachers. Correlational and factor analyses of a long list of classroom variables (aspects of teachers' backgrounds, their responses to interview questions and the ratings they received from observers on 13 dimensions, as well as mean characteristics of their pupils) suggested that the observer's rating of the teacher was our most discriminating measure of classroom climate. A step-by-step description of how this variable was handled therefore follows.

As indicated above, an observer spent a week in each classroom. For five days she sat in a back-row desk, kept a running narrative of classroom activities and behavior, scored teacher-pupil and pupil-pupil interaction, observed teaching style and interviewed the teacher. Once during the week she exchanged classrooms with the staff member assigned to the other sixth grade in the same building. At the end of the week both observers wrote summary comments on the teachers' academic policies and differential treatment of black and white pupils and scored them on a modified version of Ryans' Characteristics of Teachers Scale (1960). It is important to note that observers had not examined pupils' test scores and grades when they made their evaluations; cumulative records were copied by another staff member.

The Ryans Scale is a semantic differential instrument on which teachers are rated 1 to 7 according to their position on 18 qualities. Of these the following 12 were selected for this study:

Autocratic . . . . . Democratic
Aloof. . . . . Responsive
Unsympathetic. . . . . Understanding
Harsh. . . . . Kindly
Inflexible . . . . . Adaptable
Pessimistic. . . . . Optimistic
Dull . . . . . Stimulating

Inarticulate . . . . . Fluent
Uncertain. . . . . Confident
Narrow . . . . . Broad
Disorganized . . . . . Systematic
Partial. . . . . Fair

As the focus of this study is on racial difference, the category Partial-Fair was divided into two components, Partial-Fair generally and Partial-Fair racially. Observers were also asked to give each teacher an overall score. Table 2 shows the ratings, by categories,

TABLE 2: Mean Evaluation Score (1-7) Assigned Teachers by Major Observers, by Characteristics.

Characteristic	N	Mean
Autocratic - Democratic	(32)	4.1
Aloof - Responsive	(33)	4.6
Dull - Stimulating	(34)	4.6
Partial - Fair (Generally)	(34)	4.5
Partial - Fair (Racially)	(31)	5.1
Unsympathetic - Understanding	(33)	4.7
Harsh - Kindly	(34)	4.8
Inarticulate - Fluent	(35)	5.3
Uncertain - Confident	(35)	5.6
Disorganized - Systematic	(33)	5.0
Inflexible - Adaptable	(33)	4.6
Pessimistic - Optimistic	(34)	4.8
Narrow - Broad	(32)	4.8
Overall Effectiveness	(35)	4.6
Grand Mean Score		4.8

which major observers gave to teachers. Overall and on the separate characteristics there is good range, but a tendency towards positive rather than negative ratings. Positive ratings are most common on the characteristics that school systems probably tend to reward--Confident, Fluent and Systematic. Negative ratings are most common on Democratic, Responsive and Understanding. (See Appendix Table 3.)

As we shall indicate below, the narratives, observations and quotations recorded by the observers corroborate their ratings of teachers. We are therefore tempted to treat the scores as short-hand summaries of real differences between teachers, but we recognize the difficulty of demonstrating their validity and reliability. Eight different women served as staff observers in the 36 classrooms. The political situation surrounding permission for the study engendered considerable haste in its execution. Therefore staff training was curtailed. Though several helped develop and pretest the instruments; others received a minimum of training. Though all had B.A.'s, and half had graduate degrees in education, and though all but two had previous research experience, nevertheless it is quite possible that the norms against which they judged the teachers were somewhat divergent. For instance, half had children of their own, but half did not, and one (and only one) member of the research team was black. Her sensitivity to the position of black children in interracial classrooms was therefore probably greater than that of her fellow researchers. Neither she nor any other observer, however, showed consistent bias towards the bottom or top of the scale; and the four observers who covered the most classrooms each used a range of 5 points in their overall ratings.

One measure of inter-observer reliability is the difference between the independent evaluations of "major" and "minor" observers of the same classroom. In considering this evidence it is important to remember that the "major" observer was in the classroom 15-25 hours, but only spent 2-3 hours as "minor" observer in the other sixth grade room in the same school. In many cases the minor observer did not rate the teacher on certain items or overall, on the ground that her short visit to that classroom gave her insufficient evidence on which to form a judgment. The evaluation sheets of minor observers also carry many question marks and notes indicating uncertainty. In spite of our doubt as to the accuracy of the ratings of minor observers, we show in Table 3, for the 25 classrooms on which there are two sets of evaluations, the correlations of these ratings.

It is apparent that overall agreement between major and minor observer is high (r = .68). For six teachers the two evaluations are identical and for fifteen others only off by one point. Together this is 84 percent of the overall ratings. There is some tendency (not shown in this table) towards higher ratings by an observer who spent less time in a classroom. Agreement is less high on the separate items than overall, but even here 67 percent of the ratings are the same or only off by one point.* (See Appendix Table 4.) It is interesting

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*Fox (1966) reports the following agreement between independent observers using the Ryans check list in the N. Y. Open Enrollment Study:

35.2 percent identical
41.2 percent identical within 1 point
23.6 percent identical within 2 points
5.3 percent identical within 3 points

TABLE 3: Zero Order Correlation of Independent Evaluations of Teachers, by Characteristic.

	25 Major and Minor Observers	35 Major Observers and Mothers
Autocratic - Democratic	.22	.21
Aloof - Responsive	.49*	.34
Dull - Stimulating	.58**	.28
Partial - Fair, Generally	.36	.26
Partial - Fair, Racially	.47	.16
Unsympathetic - Understanding	.64**	.40*
Harsh - Kindly	.70**	.36*
Inarticulate - Fluent	.16	.15
Uncertain - Confident	.46*	.27
Disorganized - Systematic	.48*	.21
Inflexible - Adaptable	.57*	.22
Pessimistic - Optimistic	.74**	.34
Narrow - Broad	.64**	.11
Overall Score	.68**	.29

*Statistically significant at the .05 level.

**Statistically significant at the .01 level.

that the dimensions most frequently omitted by minor observers are Inflexible-Adaptable and Partial-Fair (Racially). There is greatest accord on Pessimistic-Optimistic and Harsh-Kindly. There is least accord on Inarticulate-Fluent, Autocratic-Democratic, and Partial-Fair (Generally). These aspects of teaching behavior are either hard to judge in a short span or capable of divergent interpretations.

Another possible indication of the validity of the scores was afforded by interviews with 3 to 4 black and 3 to 4 white mothers for each classroom. This sub-sample was randomly picked from classroom rosters and was found to match the total sample very well on salient characteristics. In the interest of maintaining rapport with the school system, the study staff did not include in the interview schedule any direct question asking the mothers to rate their children's teachers. But openings and probes encouraged them to express themselves on this subject, once rapport was established. Any reports or ratings of teachers by mothers that were recorded during the interview were later coded (blind) according to the same overall scale (1-7) as that used by the classroom observers.

Table 3 also shows the zero order correlation (.297 overall) for the summary evaluations of major observers and mothers. In 6 classrooms the average mother's rating was the same as that of the major observer. The ratings were one off 15 times, two off 10 times and three off 4 times. Observers gave the teachers higher ratings than did mothers 18 times and lower ratings 11 times. Since the interviews revealed that many of the mothers had not visited the school this year (28 percent), had not met the teacher (27 percent), or seldom talked with their child about school (29 percent),* --and since the mothers' standards of good teaching often differed considerably from those of the observers--it is surprising that accord between them and the observers proved to be as close as it did. The zero order correlation for the ratings of the mothers and the major observers is higher on items measuring warmth than on those measuring competence. Apparently the mothers' satisfaction with their children's teachers tends to be a function of how understanding and kindly the latter are.

A factor analysis** of the 13 ratings of teachers by major observers revealed both strong intercorrelation among items and the presence of three distinct sub-scales. We have labeled these sub-scales Human, Competent, and Fair. Table 4 shows their factor loadings. The "human" teacher's orientation is to the pupil. She is one who is rated democratic, responsive, understanding, kindly, adaptable, fair and optimistic. The "competent" teacher's orientation is to the subject. She

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*Most of these percentages refer to the same mothers.

**The original factor solution was principal components with 1 in the principal diagonal. The rotation was orthogonal varimax.

is fluent, confident, broad, and stimulating. The "fair" teacher is systematic and is fair both generally and in regard to race. In the discussion that follows, the reader should bear in mind that these adjectives are our shorthand for observer ratings on several teacher qualities found to vary together.

TABLE 4: Orthogonally Rotated Factor Loadings on Teacher Attributes.

	FACTOR LOADINGS		
	1	2	3
Teacher Attributes	"Human"	"Competent"	"Fair"
Autocratic - Democratic	.808	.193	.210
Aloof - Responsive	.912	.179	.181
Dull - Stimulating	.511	.739	.202
Partial - Fair, Generally	.600	.204	.603
Partial - Fair, Racially	.334	.176	.813
Unsympathetic - Understanding	.868	.195	.172
Harsh - Kindly	.923	.082	.152
Inarticulate - Fluent	.128	.901	.164
Uncertain - Confident	.011	.755	.415
Disorganized - Systematic	.139	.507	.679
Inflexible - Adaptable	.702	.431	.255
Pessimistic - Optimistic	.908	.170	.155
Narrow - Broad	.301	.813	.065
Overall	.700	.589	.256

Ryans (1960) found through factor analysis of his larger list of 18 variables three dimensions of teacher behavior, Pattern X (understanding and friendly versus aloof and egocentric behavior), Pattern Y (business-like, systematic, versus unplanned slipshod behavior), and Pattern Z (stimulating, imaginative versus dull, routine behavior). Our human dimension corresponds almost exactly with Ryans' Pattern X. Our Competent dimension is close to Pattern Y. In our study, the omission of several of Ryans' items and the focus on racial fairness has resulted in a different third dimension than Ryans found.

Relation between Teachers' Ratings and Other Characteristics

The 36 teachers on whom this study focuses are in some ways as diverse as their pupils. In age they range from mid-twenties to mid-sixties. (See Appendix Table 5 for breakdowns on teacher background.) The same spread obtains in experience as a teacher. It is noteworthy, however, that whereas only five teachers are in their first two years of teaching, almost half are in their first two years in their present school.

The high teaching experience, but low present school experience of these 36 men and women is probably a function of the fact that they are sixth grade teachers. So, too, is the finding that over half are men, 20 hold masters degrees, and all are white. It is common in this city for a sixth grade teacher to be appointed assistant principal. From these ranks each year principals are also selected, so that teachers at this grade level are more likely than teachers generally to have had short terms in present school, but to resemble principals in age, experience, sex and ethnic background. In this sample 13 of the 36 were serving as assistant principal as well as sixth grade teacher. This figure includes all of the 6 men with longest experience and 4 of the 6 most experienced women.

Many of the teachers were reticent about their backgrounds, but 19 of the 24 on whom information was available were of Irish origin, 21 had attended elementary school in Boston (11 parochial and 10 public), and half were from white collar, half from blue collar, parental homes. More than half of the teachers are looking forward to a transfer some day, either through horizontal mobility to another school ("I feel I need a change.") or through vertical mobility into an administrative position ("I hope to get a principalship, the most challenging job in education.")

Cross tabulation of the teachers' background characteristics and the ratings they received from observers (Appendix Table 6) indicates no association between ethnic origin or parochial school attendance and overall score, but teachers of Irish background receive slightly lower "human" ratings.* There is some tendency for teachers with working class background to receive higher overall ratings than those with middle class background. The observers (all women) gave more high ratings to male than to female teachers. Men tend to be more highly rated not only on the competence dimension, but also on the dimensions

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*Kornacker (1969) found that in role orientation, motives, and interests a sample of Chicago teachers could be categorized as professional, nurturant and instrumental. His professional and nurturant teachers closely resemble our "competent" and "human" teachers. Irish teachers proved to be significantly more professional and less nurturant than teachers of other ethnic groups.

we have labeled human and fair. Length of experience bears a curvilinear relationship to scores received. Beginning teachers are apt to be lowest, long time teachers come next, while those with 5 to 15 years experience tend to be rated highest on all dimensions. Assistant principals are on the average rated below regular teachers on the dimensions of fairness and humanness. No average difference in "competence" was noted between those with and without such extra administrative responsibility.

We also examined the relation between school context and the ratings given to the teachers for possible bias either in the assignment of teachers or in the ratings of observers. (It may be harder to shine as a teacher in a slum school.) We found both wide dispersion of teacher characteristics across types of schools and also some differences in central tendencies. Teachers in white middle class schools receive the lowest mean ratings; they are judged especially low on the human dimension. Teachers in lower class majority black schools have the highest mean scores both overall and on the human and competence dimensions. The "fairest" teachers were found in predominantly black schools, possibly because unprejudiced teachers are more apt to accept assignment to ghetto schools or because they have here little opportunity to show racial partiality. (See Appendix Table 7.)

The possibility of bias in the assignment (or rating) of teachers according to the ability level of the classroom was also examined. Elementary classrooms in this city are in theory usually heterogeneous. In only one out of 18 schools in this sample was there a publicly acknowledged difference between sixth grade classrooms. In two other schools small but consistent differences between classroom means on IQ (sixth grade), Math achievement (spring fifth grade), and Reading (fall sixth grade) test scores suggest that there may have been some ability grouping of sixth grade children. In four of these six schools the more highly rated teacher was in the superior classroom; in two schools the more highly rated teacher was in the other classroom (see Appendix Table 8).

In sum, observer ratings of 35 sixth grade teachers on a modified Ryans scale produced scores which show moderately high agreement between independent observers, and between observers and a sub-sample of mothers. Factor analysis of the evaluations resulted in logically defensible sub-scales. Although cross-tabulations of teachers' background characteristics and ratings indicated some association on some variables, there is also a range of teacher quality across all backgrounds. Moreover, no strong selective factor appears to have resulted in a clustering of the best teachers in middle class schools or in superior classes.

In the regression analyses presented below the three factor scores are entered separately into the equations.

Interracial Friendship

Interracial friendliness and popularity were measured with socio-

metric data. Children were handed an alphabetically arranged class roster and told:

> Please put a 1 by the names of all your very best friends in this class. Now put a 2 by the names of your good friends (not best friends, just good friends). Now put a 3 by the names of kids who are not your friends but who are okay. Now put a 4 by the names of kids you don't know very well.

The names that remained unnumbered were later assigned a 5 by the coder on the assumption that those were the respondent's least liked or most ignored classmates. With this data matrices were constructed showing the friendship rating of each child by every other child in his class. Popularity with own race is the average friendship rating (1-5) received from members of own race. Popularity with other race is the average friendship rating (1-5) received from members of the other race. It should be noted that by dividing total choices of children of each race by the number of children in that group in the classroom we have controlled for the chance occurrence of in-group or out-group choice.

Race and Sex

All analyses in this study were performed separately for white and black children, on the theory that percent of own group in school or classroom might have a different meaning for children of the majority or minority groups in our society. We were also alert to the possibility that the impact of the independent variable might be especially strong for either boys or girls. Therefore we stratified also on sex in many of the analyses to be reported below. Thus we do not treat race (nor in some analyses sex) as additional independent variables, but instead examine the relationship between the other independent and dependent variables either for the two races or for four race-sex sub-samples.

CHAPTER III

FINDINGS

Three types of analyses have been used in this study: cross-tabular (chi square), correlational, and step-wise multiple regression.

CROSS-TABULAR ANALYSIS

In the cross-tabular analysis separate tables were run with six measures of achievement as the dependent variables and three measures of school racial composition as the independent variables. These tables were run (a) by race only, (b) by race and Family SES (high or low), and (c) by race and sex. Cutting points for the independent variable were chosen to represent meaningful categories rather than thirds of the distribution, but the categories had to be different for blacks and whites to assure enough cases in each cell. Thus for whites the categories are 0-50, 51 to 80 and 81-100 percent white, and for blacks the categories are 0-20, 21 to 50 and 51-100 percent white. The measure of cumulative school racial composition is average school percent white in grades 1 to 5. Current school racial composition is measured by fifth grade school percentage white when arithmetic achievement in the fifth grade is the dependent variable and by class percentage white in the sixth grade for the sixth grade achievement measures.

The cutting points for the dependent variables are thirds of the total distribution (races together). High achievement (top third) is as follows:

Math (Spring 5)	- 6.10 - 9.20
IQ (Fall 6)	- 106 - 161
Reading (Spring 6)	- 6.60 - 11.40
GPA (6)	- 3.71 (C+) - 5.00 (A)
Conduct (6)	- 4.60 (B+) - 5.00 (A)
Attendance (6)	- 0 - 5 absences

Table 5, a and b, shows the results of the analysis. For white children present racial context is significantly related (above the .01 level) to achievement in reading and in math, but not to the other dependent variables. Thus in majority black classrooms only 11 percent of white children read on grade level or above, whereas in majority white classrooms 38 percent do. With cumulative racial context as the independent variable, the difference is even more dramatic in test scores and reaches the level of statistical significance for IQ, GPA, and conduct grades as well.

TABLE 5a: Percent of Pupils with High Achievement on Six Measures, by Current and Cumulative School Racial Composition.

(a) W H I T E S A M P L E .

	Class % White (6)				School % White (1-5)			
	0-50 % (N)	51-80 % (N)	81-100 % (N)	X^2 sig. Level	0-50 % (N)	51-80 % (N)	81-100 % (N)	X^2 sig. Level
Math (Spring 5)[1]	4 (46)	29 (119)	29 (217)	.00	0 (31)	21 (90)	35 (184)	.00
IQ (Fall 6)	27 (55)	41 (181)	43 (173)	.08	19 (31)	32 (84)	51 (190)	.00
Reading (Spring 6)	11 (57)	39 (218)	37 (173)	.00	6 (34)	25 (88)	49 (208)	.00
GPA (6)	30 (61)	43 (228)	47 (188)	.13	22 (36)	32 (97)	56 (220)	.00
Conduct (6)	32 (59)	36 (223)	48 (186)	.10	23 (35)	33 (95)	48 (218)	.02
Attendance (6)	43 (61)	27 (233)	33 (187)	.20	43 (37)	29 (94)	32 (216)	not sig.

[1] For Math (Spring 5) the Measure of Current Racial Context is School % White (5).

TABLE 5b: Percent of Pupils with High Achievement on Six Measures, by Current and Cumulative School Racial Composition (cont.)

(b) B L A C K S A M P L E

	Class % White (6)				School % White (1-5)			
	0-20 % (N)	21-50 % (N)	51-100 % (N)	X^2 sig. Level	0-20 % (N)	21-50 % (N)	51-100 % (N)	X^2 sig. Level
Math (Spring 5)[1]	4 (83)	3 (106)	17 (123)	.00	6 (106)	6 (95)	18 (60)	.05
IQ (Fall 6)	15 (91)	23 (83)	16 (127)	.14	17 (99)	17 (97)	23 (47)	not sig.
Reading (Spring 6)	15 (89)	23 (82)	19 (144)	not sig.	15 (129)	16 (101)	31 (48)	.04
GPA (6)	36 (100)	32 (95)	30 (155)	not sig.	25 (139)	33 (112)	44 (52)	.14
Conduct (6)	30 (99)	17 (89)	28 (153)	.00	23 (118)	20 (107)	38 (48)	.20
Attendance (6)	44 (97)	45 (92)	42 (151)	.04	53 (130)	46 (108)	39 (51)	not sig.

[1]For Math (Spring 5) the Measure of Current Racial Context is School % White (5).

When these tables for the white sample were rerun controlling on SES and sex, there appeared the same overall relationship between past school percentage white and achievement for boys and girls and for children of high and low social class background (see Appendix Table 9a). The relation between current percentage white and achievement is statistically significant for boys and children of high SES. The sub-group tables also preserve a tendency that can be noted for the total sample as well: There is a jump in achievement between minority and majority white classrooms, but little change when classrooms become over 80 percent white.

For black children the effect of school racial composition on achievement is much less clear. Present percentage white is unrelated to IQ, reading or GPA but shows a significant relationship to arithmetic. Significant chi squares for conduct and attendance are due to low conduct grades and high absenteeism in schools in changing neighborhoods (21-50 percent white), rather than to good conduct and attendance in majority white schools. The longitudinal measure of racial mix reaches the .05 level of significance for achievement in math and reading, but the association is not strong. When sex or SES are controlled, we find that cumulative percentage white is no longer significantly associated with achievement except in the case of the fifth grade math scores of pupils of low SES background, and that current percentage white is as unrelated to the reading achievement but as related to the math achievement of sub-groups as it was to the achievement of the black sample as a whole. (Appendix Table 9b.) Regardless of sex or SES, black children apparently learned more math in majority white schools. Fifty percent white also appears to be a boundary for black children. Math scores are as low for schools 21-50 as for schools 0-20, but are noticeably higher in schools over 50 percent white.

Thus, cross-tabular analysis indicates strong support for the overall hypothesis in the case of white children, but in the case of black children only in regard to progress in math. So far we have only controlled on two other variables, sex and SES, and these one at a time. Whether a stronger relation will appear when we control simultaneously on the two and also on school SES and initial achievement level remains to be seen.

CORRELATIONAL ANALYSIS

The correlation matrix shown in Table 6 confirms the evidence of the preceding tables as to there being a statistically significant relationship for whites for present racial mix and reading and arithmetic test scores and for past racial mix and all achievement measures except attendance. In addition, the r's reach the .05 level for present mix and IQ, GPA and Conduct, this last correlation being negative. (Black children receive lower conduct grades in white classrooms.)

TABLE 6: Correlation Matrix for Two Independent, Five Control and Six Dependent Variables (Whites in Upper Right, Blacks in Lower Left Diagonals. N's for Whites = 305 to 497; N's for Blacks = 244 to 411).

	Control Variables					I.V.		Dependent Variables					
	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Sex		-.01	.04	.00	-.01	.04	-.05	.00	.04	-.03	.19**	.30**	.10*
2. Reading (3)	.00		.32**	.57**	.33**	.47**	.69**	.26**	.30**	.40**	.35**	.21**	.12*
3. Family SES	-.05	-.03		.40**	.32**	.02	.16**	.13*	.12*	.15**	.23**	.12*	.08
4. Class SES (6)	.01	.10	.27**		.57**	.26**	.35**	.26**	.27**	.33**	.19**	.10*	.11*
5. School SES (1-5)	-.00	.10	-.03	.10		.47**	.69**	.26**	.30**	.40**	.35**	.21**	.12*
6. Class % W (6)	.03	.36**	-.05	.30**	.36**		.61**	.22**	.18**	.17**	.13**	-.10*	.05
7. School % W (1-5)	.04	.39**	.07	.14*	.39**	.57**		.36**	.32**	.27**	.32**	.16**	.04
8. Math (5)	.06	.16*	.24**	.21**	.16*	.22**	.19**		.56**	.49**	.55**	.22**	.11*
9. IQ (6)	.09	.04	.26**	.14*	.04	.03	.08	.52**		.66**	.64**	.30**	.21**
10. Reading (6)	.03	.14*	.27**	.17**	.14*	.06	.08	.46**	.59**		.64**	.25**	.10*
11. GPA (6)	.21**	.15**	.17**	-.09	.15*	-.04	.12*	.43**	.57**	.50**		.52**	.30**
12. Conduct (6)	.24**	.14*	.01	.08	.14*	.02	.02	.17**	.18**	.18**	.38**		.16**
13. Attendance (6)	.14**	.05	.23**	.15**	.05	-.02	.10	.12*	.19**	.08	.22**	.11*	

*Statistically significant at the .05 level.

**Statistically significant at the .01 level.

For black children, we again find no significant relation between either independent variable and most dependent variables. Only in the case of achievement in arithmetic is the hypothesis of a positive relationship with school percentage white, current or cumulative, supported at the .01 level.

It is also apparent from this matrix that there are strong correlations, for whites especially, between measures of individual and group SES and both school racial composition and achievement. In other words, it is possible that the uncontrolled relationships that appear in the chi square tables and correlation matrix will disappear when the contaminating effect of social class is removed.

MULTIPLE REGRESSION ANALYSIS

The imperfect linearity in the relationship between school percentage white and achievement revealed in Table 5 argues against the use of multiple regression analysis. However such analysis has the twin advantages of avoiding the danger (characteristics of tabular analysis) of spurious effects due to imprecise categories (see Tannenbaum and Bachman, 1964) and of allowing simultaneous control on several variables.

In all the multiple regression equations to be reported below the effects of both individual and group SES, as well as sex, were controlled by entering measures of these variables into the equations first. Measures of school racial mix were added next and finally Reading Achievement test scores in grade 3, in order to control on prior achievement. The standardized regression coefficients (Betas) for school percentage white are reported both with and without Reading (3) in the equations.

Table 7a shows that for white children School Percent White (1-5) is significantly related to Math (5), Reading (6), and IQ (6), even with Reading (3) controlled, although the Betas are considerably lowered by stepping in Reading (3). School SES, on the other hand, bears no significant relation to Math and IQ, but is related to Reading, GPA and Conduct. Thus, for whites, Hypothesis 1 is supported: controlling for sex, family SES, average school SES in previous grades, and prior achievement, there is a significant positive relationship between average school percentage white in previous grades and achievement in math, reading, and IQ.

For black children (Table 7b) only in Math is the effect of School Percent White (1-5) highly significant. Controlling on Reading (3) has little effect on this relationship. An interesting slight but statistically significant negative relationship between School Percent White and Attendance also appears: 6th grade attendance is less regular for black children who have been in white schools since grade 1. Hypothesis 1 is therefore supported for blacks only when the dependent

TABLE 7a: Standardized Regression Coefficients (Betas) for Measures of Achievement on School % White (1-5), with Sex, Family SES and School SES 1-5 Entered and with Reading (3) Both In and Out of Equations.

(a) W H I T E S A M P L E

Independent Variables	Dependent Variables: Math (5) β	IQ (6) β	Reading (6) β	GPA (6) β	Conduct (6) β	Attendance (6) β
(Reading (3) Out)						
Sex	-.02	.03	-.04	.18**	.30**	-.10
Family SES	.07	.04	.04	.13**	.04	.05
School SES (1-5)	.00	.14*	.25**	.21**	.20**	.15*
School % W (1-5)	.35**	.21**	.19**	.14*	.00	-.07
R^2	.13	.12	.23	.18	.14	.03
(Reading (3) In)						
Sex	-.04	.01	.06	.16**	.29**	-.11*
Reading 3	.32**	.52**	.54**	.47**	.25**	.19**
Family SES	.06	.02	.01	.10**	.03	.04
School SES (1-5)	-.06	.04	.15**	.12*	.15*	.11
School % W (1-5)	.29**	.12*	.10*	.06	.04	-.10
R^2	.22	.35	.43	.38	.19	.06

*Significant at .05 level; **Significant at .01 level.

TABLE 7b: Standardized Regression Coefficients (Betas) for Measures of Achievement on School % White (1-5), with Sex, Family SES and School SES (1-5) Entered and with Reading (3) Both In and Out of Equations (cont.)

(b) B L A C K S A M P L E

Independent Variables	Dependent Variables: Math (5) β	IQ (6) β	Reading (6) β	GPA (6) β	Conduct (6) β	Attendance (6) β
(Reading (3) Out)						
Sex	.06	.10	.03	.22**	.24**	-.13**
Family SES	.25**	.27**	.27**	.19**	.02	.21**
School SES (1-5)	.10	.01	.13*	.12*	.16**	.10
School % W (1-5)	.16**	.09	.05	.08	.05	-.12*
R^2	.11	.09	.10	.11	.08	.08
(Reading (3) In)						
Sex	.02	.02	.05	.15**	.23**	-.12*
Reading (3)	.22	.40**	.50**	.37**	.08	.04
Family SES	.20**	.17**	.15**	.10*	.00	.22**
School SES (1-5)	.08	.02	.08	.09	.15**	.10
School % W (1-5)	.15**	.07	.02	.06	.05	-.11*
R^2	.15	.23	.32	.23	.08	.08

*Significant at .05 level; **Significant at .01 level.

variable is achievement in Math. For blacks School SES (1-5) is related to no dependent variable except 6th grade conduct.

Turning to the relationship between current school racial composition and achievement (Tables 8a and b), we find that for whites class percentage white shows significant betas only when Reading (3) is not controlled. For black pupils, however, there is a relationship for scores in mathematics that is statistically significant at the .01 level regardless of whether Reading (3) is entered into the equation or not. But no other measure of black achievement is related to current percentage white. Thus, Hypothesis 2 is rejected for whites and supported for blacks only with math as the measure of achievement: with family SES and school SES and prior achievement controlled there is a significant positive relationship between current school percentage white and black achievement in math.

Table 8 also shows that for black children family SES, but not school SES, is significantly related to reading achievement with other variables controlled, whereas for white children the opposite is true. The lack of relationship for black children between social class context and verbal achievement is quite contrary to the findings of Coleman and Wilson. It is possible that use of a social class index appropriate to the situation in many black families has allowed us to assign to family SES variance that would otherwise be assigned to peer SES. As mentioned above, the family SES score apparently reflected differences in family background less accurately for white children, with the result that school SES, class SES and third grade reading scores pick up some of the variance in white achievement not accounted for by individual family background.

These effects on achievement for measures of SES suggest the possibility that even with regression analysis the apparent relationship between cumulative racial context and achievement may be spurious and due to inadequate control on SES. The regressions were therefore rerun for the 200 children whose mothers had been interviewed, entering into the equations first the same SES measures (more accurately measured for this sub-sample) and then additional measures of SES (parental educational level and mother's verbal ability). Under these conditions various measures of family SES explained more variance in white reading achievement than for the total sample and school SES was no longer a significant factor. But the significant relationship between school racial mix and white achievement in reading and math remained undisturbed. However black scores in arithmetic were not significantly related to School Percent White for the sub-sample (Table 9).

We also examined the effect of cumulative school racial composition on achievement for boys and girls separately, in order to test for a possible interaction effect between sex and racial context. No such effect is discernible on reading achievement, though social class context appears to contribute more to the reading scores of white girls

TABLE 8a: Standardized Regression Coefficients (Betas) for Measures of Achievement on Class % White (6), with Sex, Family SES, and Class SES (6) Entered and with Reading (3) Both In and Out of Equations.

(a) W H I T E S A M P L E

Independent Variables	Dependent Variables: Math (5) β	Reading (6) β	GPA (6) β	Conduct (6) β	Attendance (6) β
Reading (3) Out					
Sex	-.02	-.04	.18**	.30**	-.11*
Family SES	.13*	.03	.18**	.08	.05
Class SES (6)[1]	.10	.29**	.09	.06	.07
Class % White (6)[2]	.15*	.09*	.10*	.03	.03
R^2	.08	.12	.11	.11	.02
Reading (3) In					
Sex	-.03	-.06	.16**	.29**	-.11**
Reading (3)	.34**	.57**	.53**	.29**	.19**
Family SES	.08	.00	.15**	.06	.04
Class SES (6)[1]	.06	.16**	-.03	-.00	.03
Class % White (6)[2]	.09	.01	.02	-.02	.00
R^2	.18	.41	.36	.18	.06

[1]For Math (5) current measure is School SES (5). [2]For Math (5) current measure is School % White (5).
*Significant at .05 level; **Significant at .01 level.

Table 8b: Standardized Regression Coefficients (Betas) for Measures of Achievement on Class % White (6), with Sex, Family SES and Class SES (6) Entered and with Reading (3) Both In and Out of Equations.

(b) B L A C K S A M P L E

Independent Variables	Dependent Variables: Math (5) β	Reading (6) β	GPA (6) β	Conduct (6) β	Attendance (6) β
Reading (3) Out					
Sex	.06	.04	.22**	.24**	-.14**
Family SES	.18**	.24**	.22**	.00	.19**
Class SES (6)[1]	.06	.09	-.15**	.08	.11*
Class % W (6)[2]	.21**	.04	.01	-.01	-.04
R^2	.10	.08	.10	.06	.08
Reading (3) In					
Sex	.02	-.06	.15**	.22**	-.13**
Reading (3)	.25**	.50**	.39**	.08	-.04
Family SES	.13*	.13**	.13**	-.02	.20**
Class SES (6)[1]	.05	.06	-.17**	.07	.11**
Class % W (6)[2]	.21**	.04	.01	-.01	-.04
R^2	.16	.31	.24	.07	.08

[1]For Math (5) current measure is School SES (5). [2]For Math (5) current measure is School % W (5).
*Significant at .05 level; **Significant at .01 level.

TABLE 9: Standardized Regression Coefficients (Betas) for Reading (6) and Math (5) on School % White (1-5), with Sex, Reading (3), Family SES, and School SES 1-5 Entered into Equation for Total Sample, Sub-Sample and Sub-Sample with Additional Measures of SES Entered, by Race.

(a) W H I T E P U P I L S

	READING (6)			MATH (5)		
	Total	Sub-Sample		Total	Sub-Sample	
	(5 I.V.'s)	(5 I.V.'s)	(8 I.V.'s)	(5 I.V.'s)	(5 I.V.'s)	(8 I.V.'s)
	β	β	β	β	β	β
Sex	-.06	-.05	-.02	-.03	-.06	-.04
Reading (3)	.54**	.68**	.62**	.32**	.49**	.43**
Family SES	.01	.10	-.02	.06	.21*	.07
School SES (1-5)	.15**	.02	-.00	-.06	-.22*	-.22*
School % White (1-5)	.10*	.22*	.21*	.29**	.44**	.46**
Father's Education			.10			.20
Mother's Education			.10			-.07
Mother's Verbal Ability			.08			.12
R^2	.43	.60	.63	.22	.41	.43

[Continued]

TABLE 9 (Cont.)

(b) B L A C K P U P I L S

	READING (6)			MATH (5)		
	Total	Sub-Sample		Total	Sub-Sample	
	(5 I.V.'s)	(5 I.V.'s)	(8 I.V.'s)	(5 I.V.'s)	(5 I.V.'s)	(8 I.V.'s)
	β	β	β	β	β	β
Sex	-.05	.00	.02	.02	.02	.06
Reading (3)	.50**	.48**	.44**	.22**	.35**	.31**
Family SES	.15**	.20*	.20*	.20**	-.03	-.06
School SES (1-5)	.08	.13	.10	.08	-.06	-.09
School % White (1-5)	.02	-.12	.05	.15**	.03	.10
Father's Education			.00			-.01
Mother's Education			-.25*			-.20
Mother's Verbal Ability			.31**			.33*
R^2	.32	.35	.40	.15	.11	.17

*Significant at .05 level; **Significant at .01 level.

TABLE 10: Standardized Regression Coefficients (Betas) for Reading and Math Achievement on Family SES, Reading (3), School SES (1-5) and School % W (1-5) for Four Race-Sex Groups.

	WHITE		BLACK	
	Boy	Girl	Boy	Girl
	β	β	β	β
	Math Achievement			
Family SES	.06	.08	.10	.26**
Reading (3)	.28**	.38**	.23**	.18*
School SES (1-5)	-.09	.06	-.04	.16*
School % W (1-5)	.36**	.24**	.19*	.13
	Reading Achievement			
Family SES	.01	.02	.23**	.14*
Reading (3)	.56**	.53**	.42**	.48**
School SES (1-5)	.23**	.40**	.01	.02
School % W (1-5)	.03	-.05	.10	.02

*Significant at .05 level; **Significant at .01 level.

than to those of any other sub-group. In math, boys of both races are apparently more benefitted than are girls by attending majority white schools. (Table 10.)

THE EFFECT OF TEACHERS ON THE CLASSROOM RACE-ACHIEVEMENT RELATIONSHIP

One basic assumption of the current study is that potential benefits of desegregation are mediated by attitudes and behavior of classroom teachers, with little growth under poor teachers and much growth under good teachers. We described in Chapter II the ratings of teachers by observers and the derivation from those ratings of three factor scores labeled "human," "competent" and "fair." We will now examine the relative influence of characteristics of teachers and school racial mix on the achievement of pupils.

Table 11 shows the zero order correlations, for blacks and whites, between teacher factor scores and measures of achievement. The correlations were run both on individual and classroom mean levels. With teacher characteristics as the independent variable, the appropriate dependent variables are classroom means. However, in order to examine the effect of cumulative racial experience on achievement, while removing the effect of individual and group SES, the regressions must be run on the individual level. For this reason the correlation matrix shows coefficients for individual as well as classroom indices of achievement.

At the classroom level, the only statistically significant correlation is that between Humanness of teachers and growth in reading for black pupils. At the individual level, 7 out of 15 correlations for black pupils are statistically significant, four of these involving reading. Analysis of variance confirmed the possibility that style of teaching contributed to black growth in reading: in the fall 17 percent of the variance in black reading scores was between classrooms; in the spring 28 percent was between classrooms. It is plausible to infer that the difference might be due at least in part to the influence of teachers.

A multiple regression analysis was then performed of mean classroom reading achievement on teacher characteristics controlling on classroom percentage white and mean SES and mean IQ. Since the difference between two test scores is known to be unreliable, the dependent variable is not reading growth, fall to spring. Instead spring reading is the dependent variable and fall reading is entered into the equations as an independent variable. The results, shown in Table 12, indicate that controlling on other variables does not diminish the teacher-pupil relationship. Black pupils made significantly greater gains in reading under Human teachers, but white pupils apparently did best under teachers labelled Competent.

With this evidence as to the importance of teaching style to the

TABLE 11: Zero Order Correlation of Teacher Factor Scores and Four Measures of Pupil Achievement (Individual and Classroom Mean), by Race.

	WHITE SAMPLE			BLACK SAMPLE		
	Teacher Factor Scores			Teacher Factor Scores		
Individual Pupil	Human	Competent	Fair	Human	Competent	Fair
Reading Growth[1]	-.02	.06*	.00	.14**	.07*	-.03
Reading (6)	.03	.01	.10*	.21**	.16**	.01
GPA (6)	.05	-.03	.04	.01	.03	.05
Conduct (6)	.12**	-.05	.07*	.11**	-.06*	.11**
Attendance (6)	.03	.09*	-.16**	.02	-.01	-.03
Mean Classroom						
Reading Growth[1]	.00	.14	.14	.41*	.03	-.02
Reading (6)	-.08	.30	.01	.14	.18	.02
GPA (6)	-.23	.09	.02	-.11	-.07	.26
Conduct (6)	.14	-.01	.11	.19	-.07	.25
Attendance (6)	-.04	-.19	.19	-.03	.02	.08
IQ	-.05	.10	.10	.17	.14	.31
SES	.22**	.01	-.05	.29	-.03	.09
% White	-.35*	.03	-.01	-.35*	.03	-.01

[1]Fall to spring of sixth grade year.

*Significant at .05 level of significance; **Significant at .01 level of significance.

TABLE 12: Standardized Regression Coefficients for Mean Classroom Spring Reading Achievement Scores of Pupils on Characteristics of their Teachers, by Race (Mean SES, IQ, Fall Reading Scores, and Class Percent White Entered in Equations).

	White Pupils			Black Pupils		
	r	β	t-value	r	β	t-value
Mean Fall Reading	(.89)	.44**	2.12	(.77)	.71**	5.13
Mean IQ	(.87)	.43**	2.55	(.63)	.21*	1.44
Class % White	(.57)	.06	.60	(.17)	.03	.29
Mean SES	(.25)	.00	.01	(.31)	-.00	-.01
Teacher Dimensions						
Human	(-.08)	-.02	-.30	(.14)	.25*	2.11
Competent	(.30)	.19*	2.53	(.18)	.03	.32
Fair	(.08)	.02	.32	(.02)	-.16	-1.55
	R^2 = .865			R^2 = .719		

*Significant at .05 level.

**Significant at .01 level.

TABLE 13: Standardized Regression Coefficients (Betas) for Measures of Individual Achievement on Class % White (6) and Teacher Characteristics, with Sex, Reading (3), Family SES, and Class SES (6) Controlled.

WHITE SAMPLE

	Reading (6)	GPA (6)	Conduct (6)	Attendance (6)
	β	β	β	β
Class % White	.04	.05	.02	-.03
Teacher				
Human	.06	.09*	.14**	-.03
Competent	.09*	.01	-.04	-.07
Fair	.04	.00	.05	.14**

BLACK SAMPLE

	Reading (6)	GPA (6)	Conduct (6)	Attendance (6)
	β	β	β	β
Class % White	.07	.01	.05	-.06
Teacher				
Human	.18**	-.01	.10	-.08
Competent	.14**	.00	-.11*	.01
Fair	-.02	.03	.13**	.02

*Significant at , level.

**Significant at .01 level.

academic growth of this sample of children, we returned to individual level analysis, but entered the teacher factor scores into the equations, in addition to Sex, Reading (3), Family SES, Class SES and % White. The results, shown in Table 13, show that whereas characteristics of teachers contribute significantly to achievement in one out of three chances, controlling on these characteristics does not change the previous finding of no significant relation between class percentage white and reading score, GPA, conduct grade and attendance. Thus, white children receive higher grades for academic subjects and conduct from Human teachers, higher reading scores under Competent teachers, and attend more regularly under Fair teachers, but class racial composition has no effect on these measures of achievement. Similarly racial composition is unrelated to the reading, GPA, conduct and attendance of black children, whereas both Hummanness and Competence in teaching contribute significantly to black reading scores and Fairness to good marks in conduct. An interesting negative relation between conduct grade and teacher Competence also appears for black children.

We reported above that arithmetic was the only measure of achievement that proved to be significantly related to current racial composition, when measures of social class and prior achievement are controlled. It is therefore unfortunate that we are unable to test the effect on this relationship of controlling on style of teaching. The math achievement test was given at the end of the fifth grade year, and we have no data on the pre-sixth grade teachers of children in the sample.

The evidence of Table 13 therefore is that Hypothesis 3 must be rejected for children of both races. No relationship between classroom percentage white and available measures of achievement appears when characteristics of teachers are controlled. On the other hand, with classroom percent white controlled, teaching style is related to various measures of achievement. The influence of the teacher is thus greater than that of the racial composition of the school.

THE EFFECT OF INTERRACIAL POPULARITY

The fourth hypothesis of this study predicts that the relation between school racial mix and achievement will be strongest when interracial popularity is controlled. The rationale behind this prediction is the assumption that unfriendliness of majority group classmates would offset the potential benefit of integration. Table 14 shows statistics with which to test this hypothesis.

It is apparent that popularity with the other race contributes nothing to the prediction of reading achievement or conduct grade, but contributes significantly to the prediction of grade point average and attendance. However class percentage white is no more related to these outcomes than it was when popularity score was not added to the equations. (See Table 8.) These findings apply equally to black and white children. Therefore Hypothesis 4 must be rejected: no relationship exists between class percentage white and Reading Achievement, GPA,

TABLE 14: Standardized Regression Coefficients (Betas) for Measures of Achievement on Class % White, Interracial Popularity and Four Other Independent Variables, by Race.

	Reading (6)	GPA (6)	Conduct (6)	Absences (6)
	WHITE SAMPLE			
Sex	-.06	.14**	.29**	-.13**
Reading (3)	.57**	.51**	.29**	.15**
Family SES	.00	.16**	.06	.06
Class SES	.16**	-.03	-.00	.02
Class % W (6)	.00	.00	-.02	-.02
Popularity with other Race	.02	.12*	.00	.20**
	BLACK SAMPLE			
Sex	-.03	.19**	.25**	-.08
Reading (3)	.50**	.39**	.09	-.04
Family SES	.11	.11*	-.03	.17**
Class SES	.07	-.16**	.08	.13*
Class % W (6)	.04	.01	-.01	.05
Popularity with other Race	.07	.11*	.07	.12*

*Significant at .05 level.

**Significant at .01 level.

conduct grade, or attendance, regardless of whether or not we control on interracial popularity.

Alternative explanations suggest themselves for the significant relationship found between interracial popularity and GPA or attendance. Either popularity encourages academic achievement and regularity of attendance, or else status as an achiever and frequent interaction (attendance) make for popularity. We are not able with the data at hand to determine which mechanism is dominant. In either case it seems that the relationship should be stronger for children in a minority racial situation. As a test of this supposition the regressions were rerun for whites in majority black classrooms and for blacks in majority white classrooms. The prediction is strongly supported.

Table 15 shows that even with a more stringent control on ability (sixth grade IQ instead of third grade reading achievement), GPA and attendance are significantly higher for white students who are popular with blacks, but this phenomenon is especially noticeable in majority black classrooms. For black students in majority white classrooms GPA is related to interracial popularity at the .01 level. However, the attendance record of these children is related to their SES, rather than to their popularity with whites.

Thus, although we have not found that for children equally popular with the other race, grades and attendance are better in whiter classrooms, we have found that for children in classrooms of similar racial mix, the more popular interracially will have better grades and attendance. Moreover as the percentage of own race decreases, popularity with the other race apparently becomes more crucial to academic performance.

TABLE 15: Multiple Regression Coefficients (Betas) for GPA and Attendance on Interracial Popularity and Four Other Independent Variables, Overall and in Minority Group Situation, by Race.

	WHITE CHILDREN		BLACK CHILDREN	
Independent Variables	All Classrooms	Majority Black Classrooms	All Classrooms	Majority Black Classrooms
	G P A			
Sex	.14**	.11	.18**	.16*
IQ	.61**	.47**	.55**	.45**
Family SES	.17**	.14	.08	.19*
Class SES	-.05	-.49**	-.18**	.22**
Interracial Popularity	.10**	.21*	.03	.17**
	A T T E N D A N C E			
Sex	-.13*	-.31**	-.09	-.08
Family SES	.07	.07	.17**	.23**
Class SES	.05	-.05	.11*	.23**
Interracial Popularity	.23**	.34**	.12*	.06

*Significant at .05 level.

**Significant at .01 level.

CHAPTER IV

CONCLUSION: IMPLICATIONS FOR RESEARCH AND PRACTICE

The findings reviewed in the previous chapter indicate that there is a positive relationship between school percentage white and academic achievement. However, several provisos must be added:

(1) The relation is more consistently significant if the independent variable is cumulative, rather than current percentage white.

(2) The relation is more consistently significant if the dependent variable is mathematics, rather than other measures of achievement.

(3) The relation tends to disappear when early achievement (ability ?) is controlled.

(4) The relation tends to be stronger for white children than for black children.

(5) Controlling on teacher characteristics or interracial popularity has no effect on the relation (or lack of relation) between racial mix and achievement.

What credibility do the findings deserve? The chi square tables show a jump in the achievement of children of both races in schools over 50 percent white, which suggests that the effect of racial context on achievement may in fact be greater than appears in regression analysis without correction for non-linearity. The stronger effect that appears for cumulative than for current school percentage white is most plausible and may be one reason why many previous studies without long-term measurement of racial experience found that desegregation per se made little difference in achievement.

The stronger effect of context on mathematics than on reading might be because third grade reading achievement is a less appropriate Time 1 control on later achievement in math than in reading. However, the betas diminish with Reading (3) in the equations almost as much when Math as when Reading is the dependent variable. The more likely explanation of the greater effect for Math is (a) that at the fifth grade level it is a school-learned skill, as compared with reading that can be picked up at home, in libraries, or from street signs, and (b) that the teaching of Math is less effective in ghetto than in non-ghetto schools.

The other measures of achievement available to this study are also poor measures of school learning. IQ is supposed to measure native

ability rather than school achievement and may in fact measure social class background more accurately than it measures either ability or achievement. Marks in academic subjects (GPA) and conduct are influenced by the teacher's attitudes and perceptions and are more or less normalized to the particular classroom. Attendance is at best an indicator of liking for, rather than success at, school work, and in many cases reflects health or distance from school or family hour of rising, rather than either of these. Thus, since 5 of the 6 measures of achievement are poor indicators of school learning, the lack of significant relationship between independent and dependent variables in many tests of the hypotheses should not detract from the importance of the significant effect found in the case of mathematics.

However, a hasty conclusion that racial context has more influence on the achievement of white than of black children could be an "ecological fallacy," since a selective factor may be in part responsible. It is probable that, whereas housing discrimination and loyalty locks black families of all social class levels in the ghetto, most white families who remain in a racially changing neighborhood do so because large families, illness, desertion or poverty prevents them from moving. In other words their SES may be lower than appears and this, rather than the racial mix of the neighborhood, may explain the low achievement of their children. Analysis of the sub-sample with more accurate and more powerful measures of SES did not reduce the relation for whites between school racial composition and achievement. However, the stronger effect for whites may still be due to unmeasured aspects of home background and not entirely to the differential effect of school race on white and black children.

The findings of this study do not support those of Coleman, et al. (1966), the U. S. Commission (1967) or Wilson (1967) as to the importance of school SES, as compared to family SES or school race, in explaining achievement scores. Only for whites in reading is the relationship significant and this relationship disappears for the more intensively studied sub-sample. These results suggest that, in many studies with weak measures of family background, School SES picks some of the variance that more powerful measures would attribute to individual background.

In view of the fact that the hypothesis of the study received clearest support with mathematics as the dependent variable and also in view of the important relation found between behavior of teacher or peers and achievement, it is a pity that the only math score available to the study was for the previous year--in other words under a different teacher and possibly different peer group structure. Future tests of the hypothesis should secure before and after measures of several different school-learned skills and should attempt to relate these not only to cumulative measures of classroom racial and SES composition, but also to cumulative measures of the type of teaching and peer group behavior to which individuals have been exposed. Such studies should examine (as we did) the position of white or other ethnic group

children who are isolated in mostly black classrooms, as well as that of black children in majority white classrooms.

Some evidence has been found for the proposition that the academic success of minority group children is contingent upon their acceptance into the majority group peer structure. The evidence that peer group popularity correlates with other types of status and that unpopularity correlates with alienation from school (absenteeism) points to the vulnerable position of those low on several status dimensions and the need for teachers to learn how to intervene effectively in support of whichever racial group is in the minority.

Perhaps the most important finding of the study is that dimensions of teachers' behavior affect black and white children differently. Desegregating school systems should pay greater attention to the selection and training of teachers assigned to their classrooms. An attitude of optimism (expectancy of academic success) and human relations skill are apparently more important than subject competence in raising the achievement of children, both those in the minority in particular classrooms and those in the minority in our society.

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APPENDIX

APPENDIX TABLE 1: Boston Schools Enrolling 5 or More Negroes in Sixth Grade in 1967, by School SES and School Percentage Negro. (Schools Designated by Letters.)

School SES		School Percentage Negro					Total	
		1-20	21-40	41-60	61-85	86-100	City	Sample
Low	1		I (3)	U (2) V (1)	AA (2) BB (1) CC (4) DD (3) EE (3)	HH (1) II (2) JJ (2)	11 (24)	4 (8)
	2	A (3) B (1)	J (2) K* (4) L (4) M (3) N* (3)	W (1) X (1) Y (2)	FF (3) GG (1)	KK* (2) LL* (2) MM (4) NN (2) OO (3)	17 (41)	5 (11)
	3	C (1) D (1) E (2) F (2) G (2) H (2)	O (3) P (3) Q (2) R (1) S (1)	Z (3)		PP (1) QQ (1) RR (3) SS (2) TT (2) UU (1)	18 (33)	8 (15)
High	4		T (3)				1 (3)	1 (2)
Total	In City	8 (14)	12 (32)	6 (10)	7 (17)	14 (28)	47 (101)	
	In Sample	6 (12)	4 (8)	3 (6)	2 (4)	3 (6)	18 (36)	

*One-sex

Note: Number of Classrooms in parentheses; underlined schools fell in sample.

APPENDIX TABLE 2: Frequency Distribution of Sample, by Race and Classroom Percentage White.

School	Classroom Code	% White	# White	# Black	# Other	Total #
E	1	93	27	2	0	29
F	2	88	29	4	0	33
G	3	88	21	3	0	24
G	4	84	21	4	0	25
E	5	83	24	5	0	29
F	6	82	28	4	2	34
A	7	82	22	4	1	27
A	8	81	21	4	1	26
Total	8	81-100	193	30	4	227
T	9	74	14	5	0	19
I	10	71	17	6	1	24
A	11	69	18	8	0	26
T	12	67	16	7	1	24
Q	13	66	21	11	0	32
Q	14	66	21	9	2	32
L	15	66	21	11	0	32
H	16	64	14	6	2	22
H	17	64	14	8	0	22
Y	18	61	17	11	0	28
L	19	59	19	13	0	32
U	20	58	14	10	0	24
D	21	55	18	14	1	33
U	22	54	14	9	3	26
Total	14	51-80	238	128	10	376
I	23	48	11	12	0	23
AA	24	40	12	18	1	31
Z	25	30	8	12	7	27
AA	26	30	10	21	2	33
Z	27	24	8	15	10	33
Y	28	23	6	20	0	26
Total	6	21-50	55	98	20	173

[Continued]

APPENDIX TABLE 2 (Cont.)

School	Classroom Code	% White	# White	# Black	# Other	Total #
FF	29	15	4	18	5	27
FF	30	12	3	17	6	26
NN	31	8	2	22	0	24
NN	32	4	1	23	1	25
JJ	33	4	1	24	1	26
JJ	34	0	0	28	1	29
SS	35	0	0	11	0	11
SS	36	0	0	13	0	13
Total	8	0-20	11	156	14	181
Grand Total	36	0-100	497	412	48	957

APPENDIX TABLE 3: Frequency Distribution of Teacher Evaluation Scores by Characteristics (Major Observer).

Characteristic	SCORE 1	2	3	4	5	6	7	Mean
Autocratic - Democratic	3	7	3	4	3	10	2	4.1
Aloof - Responsive	3	2	2	7	7	8	4	4.6
Dull - Stimulating		3	7	9	3	7	5	4.6
Partial - Fair, Generally	2	1	7	7	6	8	3	4.5
Partial - Fair, Racially		2	4	7	4	5	9	5.1
Unsympathetic - Understanding	3		5	6	6	7	6	4.7
Harsh - Kindly	1	3	3	6	8	9	4	4.8
Inarticulate - Fluent	1	1	3	4	7	11	8	5.3
Uncertain - Confident	1	1	4	1	6	8	14	5.6
Disorganized - Systematic	2	1	2	5	8	9	6	5.0
Inflexible - Adaptable	1	3	4	5	12	4	4	4.6
Pessimistic - Optimistic	1	3	3	8	6	5	8	4.8
Narrow - Broad			6	7	8	8	3	4.8
Overall		5	4	6	8	9	3	4.6
Total N	18	32	57	82	92	108	79	468
Percent	4%	7%	12%	18%	20%	23%	15%	
Total Mean								4.8

APPENDIX TABLE 4: Comparison of Independent Evaluations of Teachers by (a) Major and Minor Observers, and by (b) Major Observers and Mothers.

Characteristics	(a) MAJOR AND MINOR OBSERVERS N	r	Same	± 1	± 2	± 3	± 4	± 5	(b) MOTHERS AND MAJOR OBSERVERS N	r	Same	± 1	± 2	± 3
Autocratic - Democratic	22	.22	2	9	4	5	2			.21				
Aloof - Responsive	22	.49*	3	9	7	2	1			.34				
Dull - Stimulating	25	.58**	5	10	8	2				.28				
Partial - Fair, Generally	21	.36	4	6	9	1		1		.26				
Partial - Fair, Racially	18	.42	5	7	2	3	1			.16				
Unsympathetic - Understanding	20	.64**	6	9	3	2				.40*				
Harsh - Kindly	25	.70**	8	12	4		1			.36*				
Inarticulate - Fluent	25	.16	9	9	3	4				.15				
Uncertain - Confident	25	.46*	9	9	4	3				.22				
Disorganized - Systematic	22	.48*	7	9	4	1	1			.21				
Inflexible - Adaptable	18	.57*	1	9	5	3				.22				
Pessimistic - Optimistic	20	.74**	9	6	4	1				.34				
Narrow - Broad	20	.64**	5	11	4					.11				
Total N	283		73	115	61	27	6	1						
Total %			26%	41%	22%	9%	2%	0.4%						
Overall Score	25	.68**	6	15	2	1	1		35	.29	6	15	10.	4
			24%	60%	8%	4%	4%				17%	43%	28%	12%

*Statistically significant at the .05 level; **Statistically significant at the .01 level.

APPENDIX TABLE 5: Teacher Background Characteristics.

AGE (N = 34*)		EXPERIENCE AS TEACHER (N = 35*)		EXPERIENCE THIS SCHOOL (N = 35*)	
20-29	32%	< 1 yr.	6%	<1 yr.	20%
30-39	24%	1-2 yrs.	6%	1-2 yrs.	25%
40-49	9%	2-5 yrs.	14%	2-5 yrs.	23%
50-59	26%	6-10 yrs.	20%	6-10 yrs.	20%
60-69	9%	11-15 yrs.	20%	11-15 yrs.	3%
		16-20 yrs.	11%	16-20 yrs.	5%
		>21 yrs.	23%	>21 yrs.	3%

SEX (N = 36)		HIGHER EDUCATION (N = 33*)		ASSISTANT PRINCIPAL (N = 36)	
Male	61%	B.A. only	9%	yes	39%
Female	39%	B.A. +	30%	no	61%
		M.A.	61%		

ETHNIC BACKGROUND (N = 24*)		PARENTAL SES (N = 21*)		ELEMENTARY SCHOOL (N = 28*)	
Irish	79%	Blue Collar	48%	Boston Parochial	39%
Other	21%	White Collar	52%	Boston Public	36%
				Elsewhere	25%

HOPE FOR TRANSFER SOON? (N = 29*)	
No, like it here	41%
Yes, but like it here	14%
Yes, don't like it here	21%
Yes, to become administrator	24%

*Background information was unavailable for some teachers.

APPENDIX TABLE 6: Teachers' Average Evaluation Score, Overall and on Three Dimensions, by Background Characteristics.

	Human		Competent		Fair		Overall	
	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$	N	$\bar{X}$
Ethnic Background								
Irish	(19)	4.1	(19)	5.0	(18)	5.1	(19)	4.6
Other	(15)	4.9	(15)	4.9	(14)	4.8	(15)	4.7
Elementary School								
Parochial	(10)	4.5	(10)	5.2	(10)	5.0	(10)	4.7
Public	(17)	4.6	(17)	5.0	(17)	4.9	(17)	4.4
Parental SES								
White Collar	(12)	4.5	(12)	5.5			(12)	4.4
Blue Collar	(9)	5.4	(9)	5.6			(9)	5.7
Sex								
Male	(21)	4.9	(21)	5.4	(21)	5.1	(21)	5.0
Female	(13)	3.9	(13)	5.2	(11)	4.7	(14)	3.9
M.A.								
Yes	(19)	4.7	(19)	5.3	(20)	4.9	(19)	5.2
No	(13)	4.0	(13)	4.6	(12)	4.6	(13)	3.8
Experience								
High	(12)	4.0	(12)	4.8	(12)	4.7	(7)	4.6
Medium	(14)	5.6	(12)	5.0	(14)	5.5	(14)	5.6
Low	(9)	3.1	(8)	4.0	(8)	4.5	(12)	3.1
Tenure								
High	(3)	4.0	(3)	4.0	(3)	5.3	(3)	4.0
Medium	(7)	4.4	(7)	4.1	(7)	5.4	(8)	5.1
Low	(25)	4.0	(24)	4.6	(25)	4.8	(24)	4.6
Assistant Principal								
Yes	(13)	4.2	(13)	5.0	(13)	4.5	(13)	4.5
No	(21)	4.8	(21)	5.1	(20)	5.0	(23)	4.4
Hope for Transfer								
Yes	(17)	4.5	(17)	5.1	(18)	4.7	(17)	4.6
No	(11)	4.9	(11)	5.1	(11)	4.9	(11)	4.5

APPENDIX TABLE 7: Teacher Average Evaluation Score, Overall and on Three Dimensions, by School Social Context.

SCHOOL CONTEXT	Score	HUMAN N	COMPETENT N	FAIR N	OVERALL N
Middle Class; White; Blacks Out of District	1	3		1	
	2		1	1	4
	3	2	1	1	1
	4	1	7	2	2
	5	6		4	2
	6	2	4	2	5
	7		1	3	
		x=3.9	x=4.6	x=4.8	x=4.2
Lower Class; Majority White	1				
	2	2			1
	3	1		1	
	4	2	4	4	2
	5	1	1	1	4
	6	2	3	2	1
	7				1
		x=4.0	x=4.9	x=4.5	x=4.8
Lower Class; Majority Black	1			1	
	2	1			
	3	1	1		1
	4		1	1	1
	5		3	2	1
	6	4	1	2	2
	7			1	1
		x=4.8	x=5.5	x=4.9	x=5.2
Predominantly Black	1				
	2	1	1		
	3			1	2
	4	3	3	1	2
	5		1	1	
	6	2	1	1	1
	7			2	1
		x=4.3	x=4.2	x=5.3	x=4.5

APPENDIX TABLE 8: Evaluation of 6th Grade Teachers and Test Scores of Pupils in Three Schools with More than 5 Point Differences between Mean IQ of 6th Graders in Two Sample Classrooms.

	IQ (6th Grade)		MATH (5th Gr. Spr.)		READING (6th Gr. Fall)		TEACHER EVALUATION SCORE			
Race	W	B	W	B	W	B	Human	Competent	Fair	Overall
Classroom										
36	112	97	6.1	4.7	5.2	4.0	6	6	7	6
35	101	89	5.7	4.7	4.9	4.1	1	3	1	2
03	-	99	-	4.6	-	-	5	6	6.5	5
04	-	88	-	3.6	-	-	4	4.5	4	4
05	-	101	-	4.5	-	4.9	4	4.5	3.5	4
06	-	94	-	4.2	-	4.3	6	7	6	7

APPENDIX TABLE 9a: Percent of Pupils with High Achievement on Three Measures, by Current and Cumulative Racial Composition and by Sex and SES Level: White Sample.

	Class % White (6)				School % White (1-5)			
	0-50 % (N)	51-80 % (N)	81-100 % (N)	X^2 sig. Level	0-50 % (N)	51-80 % (N)	81-100 % (N)	X^2 sig. Level
Math (Spring 5)[1]								
SES H	0 (13)	30 (47)	29 (93)	.00	0 (7)	15 (27)	37 (90)	.00
L	11 (18)	22 (45)	29 (83)	.09	0 (19)	22 (58)	32 (87)	.00
Boy	3 (29)	34 (65)	34 (121)	.00	0 (18)	28 (54)	43 (98)	.00
Girl	6 (17)	22 (54)	21 (95)	.06	0 (13)	11 (36)	25 (85)	.00
Reading (Spring 6)								
SES H	6 (16)	49(100)	38 (60)	.00	13 (8)	17 (29)	58 (97)	.00
L	11 (37)	29(103)	34 (100)	.05	5 (22)	26 (53)	39 (102)	.00
Boy	12 (41)	45(108)	37 (99)	.00	9 (22)	33 (52)	54 (113)	.00
Girl	6 (16)	33(109)	37 (74)	.18	0 (12)	14 (36)	42 (94)	.00
GPA (6)								
SES H	35 (17)	53(105)	56 (64)	.07	23 (22)	29 (59)	48 (108)	.02
L	26 (38)	34(107)	42 (112)	.24	25 (8)	34 (32)	64 (102)	.01
Boy	21 (39)	34(115)	45 (108)	.03	17 (23)	29 (56)	50 (119)	.00
Girl	45 (22)	52(113)	49 (80)	not sig.	31 (13)	37 (41)	62 (101)	.02

[1]For Math (Spring 5) the measure of Current Racial Context is School % White (5).

APPENDIX TABLE 9b: Percent of Pupils with High Achievement on Three Measures, by Current and Cumulative Racial Composition and by Sex and SES Level: Black Sample.

	Class % White (6)				School % White (1-5)			
	0-20	21-50	51-100	X^2 sig.	0-20	21-50	51-100	X^2 sig.
	% (N)	% (N)	% (N)	Level	% (N)	% (N)	% (N)	Level
Math (Spring 5)[1]								
SES H	9 (22)	11 (19)	26 (38)	.01	13 (30)	16 (25)	22 (9)	not sig.
L	3 (34)	3 (40)	14 (50)	.02	3 (69)	2 (58)	18 (40)	.01
Boy	5 (40)	2 (43)	18 (50)	.00	6 (47)	8 (38)	19 (21)	not sig.
Girl	2 (43)	3 (63)	16 (73)	.00	5 (29)	5 (56)	17 (59)	.10
Reading (Spring 6)								
SES H	17 (24)	50 (18)	23 (34)	.18	17 (36)	35 (26)	44 (9)	.12
L	16 (57)	16 (58)	17 (96)	not sig.	14 (85)	9 (64)	29 (38)	.08
Boy	16 (38)	31 (35)	18 (56)	not sig.	15 (60)	20 (40)	33 (21)	not sig.
Girl	14 (51)	17 (47)	20 (87)	not sig.	15 (69)	13 (60)	30 (27)	.12
GPA (6)								
SES H	44 (25)	42 (19)	41 (37)	not sig.	41 (37)	44 (27)	60 (10)	not sig.
L	32 (66)	28 (68)	27 (103)	not sig.	19 (94)	28 (74)	39 (41)	.19
Boy	32 (44)	27 (45)	23 (62)	not sig.	21 (66)	26 (46)	36 (22)	not sig.
Girl	39 (56)	36 (50)	34 (92)	not sig.	29 (73)	37 (65)	50 (30)	not sig.

[1]For Math (Spring 5) the measure of Current Racial Context is School % White (5).